# Workshop Manual

## Octavia II 2004 ➤ , Octavia II 2010 ➤ , Superb II 2008 ➤ , Yeti 2010 ➤ , Yeti 2011 ➤

## Gearbox 0A4

Edition 06.2019

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# List of Workshop Manual Repair Groups

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00 - Technical data

30 - Clutch

34 - Controls, housing

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39 - Final drive - differential

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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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# 00 – Technical data

## 1 Safety instructions

(SRL001413; Edition 06.2019)

⇒ "1.1 Safety precautions when working on vehicles with a start/stop system", page 1

⇒ "1.2 Safety precautions during road tests in which testing and measuring equipment is used", page 1

### 1.1 Safety precautions when working on vehicles with a start/stop system

**When working on vehicles with start/stop system, please observe the following instructions:**

WARNING

*Risk of injury as a result of automatic engine start in vehicles with start/stop system.*

- *In vehicles with the start/stop system activated (identifiable by an indication in the dash panel insert) the engine can start automatically if required.*
- *It is necessary to ensure that the start-stop system is deactivated when carrying out work on the vehicle (switch ignition off and if required switch ignition on again).*

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### 1.2 Safety precautions during road tests in which testing and measuring equipment is used

**If test and measuring devices are required during test drives, observe the following information:**

WARNING

*There is a risk of accident from unintended motion and insufficient securing of testers and measuring instruments.*

*There is a risk of injury from the release of the passenger airbag in the event of an accident.*

- *Operation of test and measuring instruments by the driver while driving may result in deviating from the direction of travel.*
- *There is an increased risk of injury or accident from unsecured testers and measuring instruments.*
- *Fasten test and measurement equipment with a strap on the rear seat and secure their operation by another person sitting on the rear seat.*

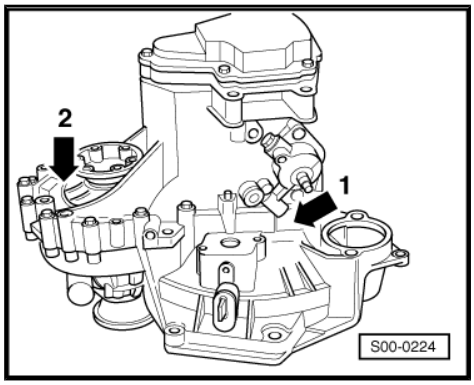
# 2 Identification

⇒ “2.1 Gearbox identification”, page 2

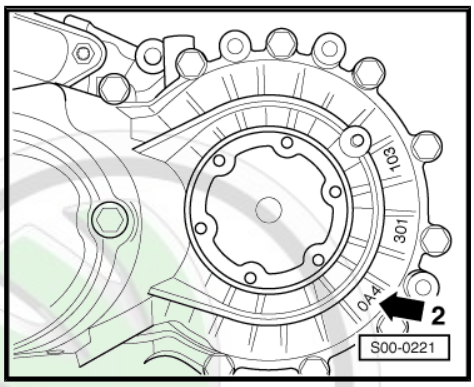
## 2.1 Gearbox identification

Identification characters and production date -arrow 1-

Identification of gearbox 0A4 -arrow 2-

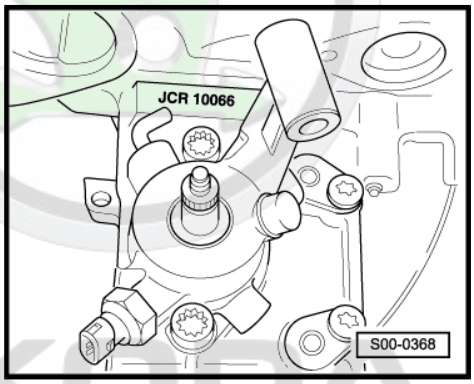



**Identification of gearbox 0A4 -arrow 2-**




**Codes and production date of gearbox**

| Example: | JCR | 10 | 06 | 6 |
|---|---|---|---|---|
| | I | I | I | I |
| | I | I | I | I |
| | Engine identification characters | Day | Month | Manufacturing year (2006) |




Additional data provides information about the production facility.

**Note**

*The gearbox identification characters also appear on the vehicle data sticker.*

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# 3 Repair instructions

⇒ “3.1 General points”, page 3

⇒ “3.2 Contact corrosion”, page 5

⇒ “3.3 Seals and sealing rings”, page 5

⇒ “3.4 Screws, nuts”, page 6

## 3.1 General points

To ensure flawless and successful gearbox repairs, the greatest care and cleanliness as well as the use of good and proper tools are essential.

Also note the basic rules on safety when performing repair procedures.

A number of generally valid notes for individual repair operations - which are otherwise listed several times at numerous points in the workshop manual - are summarised here.

They apply for this particular workshop manual.

### Special tools

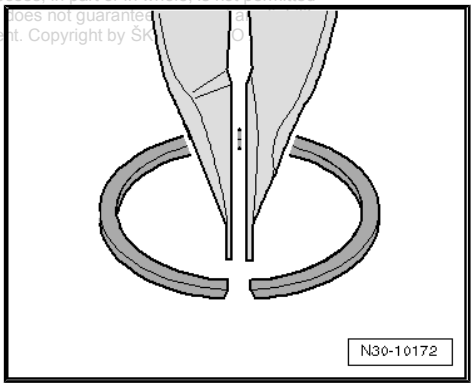
For a complete list of special tools used in this workshop manual, see ⇒ Workshop equipment and special tools .

### Gearbox

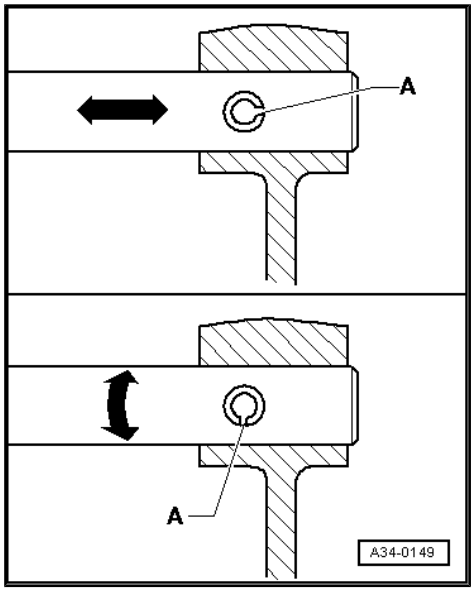
- When installing the gearbox, ensure the dowel sleeves are correctly located between the engine and gearbox.
- When installing bearing brackets or waxed components, the contact surfaces must be cleaned. Contact surfaces must be free of wax and grease.
- Bolts and other attachments should have a classification in the ⇒ Electronic Catalogue of Original Parts .
- Following installation, check gear oil level ⇒ “3 Checking the gear oil level”, page 154 .
- Gearbox oil ⇒ Electronic catalogue of original parts .
- Filling capacity ⇒ “4.1 Filling capacity”, page 7 .

### Circlips

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- Do not over-tension the circlips.
- Fitting position for some circlips: the ring is narrower on top, as is its installation position. This make it possible for the pliers to gain a better grip during removal and installation.
- After removal, replace retaining rings which have been damaged or overstretched.
- Circlips must be positioned in the base of the groove.
- Replace roll pins. Fitting position: Slot -A- along power flow -arrow-.



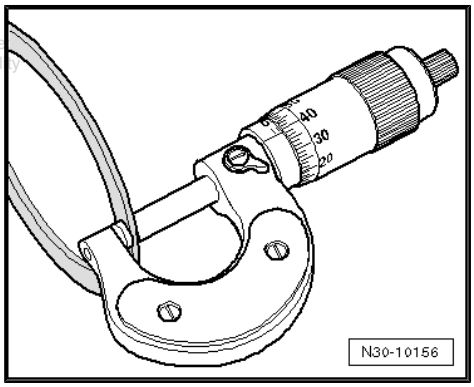

### Bearings

- Lubricate all bearings with gear oil before installing.
- Heat inner races of tapered roller bearings with the inductive heater - VAS 6414- to approx. 100°C before installing. Press in to stop when installing so there is no axial clearance.
- Do not mix up the outer and inner rings of bearings of the same size. The bearings are matched in pairs.
- Tapered roller bearings fitted to one shaft must be replaced as a set. Use same make of bearings.
- Install needle bearings, ball sleeves and roller sleeves with lettered side (thicker metal) towards fitting tool.

### Shims

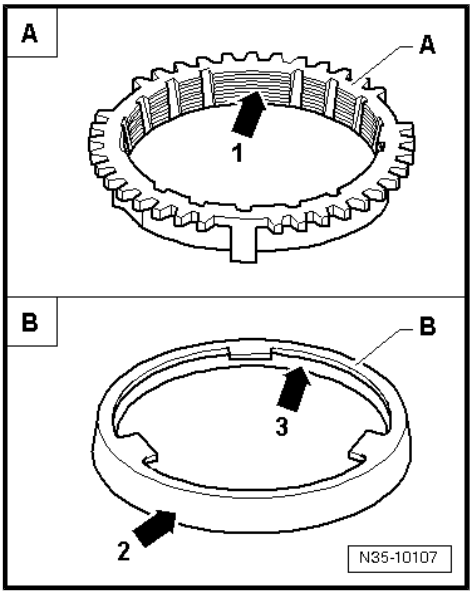
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- Gauge shims at several points with a micrometer. The various thicknesses make it possible to achieve the exact shim thickness required.
- Check for burrs and damage.
- Install only flawless shims.




### Synchro-rings

- These are not interchangeable. When reusing synchro-rings, always fit to the same synchromeshed gear.
- Check for wear and replace if necessary.
- Check grooves -arrow 1- of synchro-ring -A- and inner ring for flat spots (worn grooves).
- If synchro-rings are coated, coating must not be damaged.
- If an intermediate ring -B- is installed, check the outer friction surface -arrow 2- and inner friction surface -arrow 3- of this intermediate ring for »scoring« and »signs of abnormal wear«.
- Check the cone of the synchromesh gear for »scoring« and »signs of abnormal wear«.
- Moisten synchromesh mechanism with gear oil before installing.




**Gears and synchro-hubs**

- Heat synchronizer body with inductive heater - VAS 6414- to approx. 100°C before installing. Press in to stop when installing so there is no axial clearance.
- Heat gear wheels with inductive heater - VAS 6414- to approx. 100°C before installing. Press in to stop when installing so there is no axial clearance.
- Note installation position.

**Synchromeshed gears**

- After assembly, check synchromesh gears for slight play, or for freedom of movement.

**Clutch**

- Ensure that the pressure plate does not cant: loosen and tighten bolts diagonally and in several gradual stages.
- If the clutch has burnt out, thoroughly clean the clutch housing and the friction surface of flywheel with a cloth to reduce the smell of burnt linings.

## 3.2 Contact corrosion

The gearbox housing and the clutch housing are made out of magnesium alloy.

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Bolts and other components that come into direct contact with the gearbox have a surface with varying finishes in relation to it.

The use of substitute components causes contact corrosion (screws. nuts. washers ...). The gearbox housing and clutch housing are damaged.

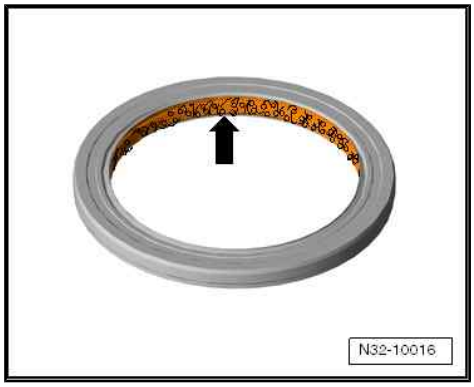
Generally install parts which are indicated in the ⇒ Electronic Catalogue of Original Parts .

## 3.3 Seals and sealing rings

Replace the gasket rings and seals after disassembly.

After removing gaskets and seals, always inspect contact surface of housing or shaft for burrs resulting from removal or for other signs of damage.

Before installing radial shaft sealing rings, lightly oil outer diameter and half-fill space between sealing lips -arrow- with sealing grease - G 052 128 A1- .




The open side of the sealing rings faces the sealing fluid.

After installing, check oil level and top up
⇒ “3 Checking the gear oil level”, page 154 .

Before inserting lightly oil the O-rings, in order to prevent the rings being squashed during installation.

**Sealant**

- Thoroughly clean housing joint surfaces before applying sealing paste .
- Apply sealing paste - AMV 188 200 03- uniformly but not too thick.

## 3.4 Screws, nuts

- Loosen and tighten fixing screws and securing nuts of covers and housings crosswise in stages.
- Do not tilt particularly sensitive parts - e.g. clutch pressure plates - and loosen and tighten them crosswise in stages.
- Tightening torques are for unlubricated nuts, bolts and screws.
- Replace self-locking nuts and bolts each time they are removed.
- It is important to ensure at all bolted connections that the contact surfaces as well as the nuts and bolts are waxed only after being installed, should this be necessary.
- Clean all threaded holes into which self-locking bolts are inserted, using a thread tap to remove locking agent residues. Otherwise there is a danger of bolts shearing when subsequently being removed.
- Check pitch of thread, to ensure correct thread chaser is used to clean threads and to ensure the threads are not damaged.

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# 4 Technical data

⇒ “4.1 Filling capacity”, page 7

⇒ “4.2 Assignment gearbox - engine - Octavia II”, page 7

⇒ “4.3 Assignment gearbox - engine, Superb II”, page 8

⇒ “4.4 Assignment gearbox - engine, Yeti”, page 8

## 4.1 Filling capacity

| | |
|---|---|
| Capacity (disassemble the complete gearbox) | 2.0 ltr. |
| Change quantity (partially disassembled gearbox)[1)] | 1.8 l |
| Gear oil | ⇒ Electronic Catalogue of Original Parts |

1) The gearbox housing and clutch housing were not separated.

## 4.2 Assignment gearbox - engine - Octavia II

| Manual gearbox | | 5-speed 0A4 | |
|---|---|---|---|
| **Engine identification characters** | | **LEL** | **JQP** |
| Manufactured | from | 03.2010 | 08.2008 |
| | to | | 03.2010 |
| Allocation | Engine | 1.4/96 kW TSI | 1.8 ltr/118 kW TFSI |

| Manual gearbox | | 5-speed 0A4 | | |
|---|---|---|---|---|
| **Engine identification characters** | | **LHW** | **LUB** | **MDZ** |
| Manufactured | from | 06.2009 | 11.2010 | 11.2010 |
| | to | 04.2013 | 04.2013 | 04.2013 |
| Allocation | Engine | 1.6/77 kW TDI CR | | |

| Manual gearbox | | 5-speed 0A4 | |
|---|---|---|---|
| **Engine identification characters** | | **GQQ** | **JCR** |
| Manufactured | from | 02.2004 | 06.2006 |
| | to | 05.2006 | 04.2013 |
| Allocation | Engine | 1.9 /77 kW TDI PD | |

| Manual gearbox | | 5-speed 0A4 |
|---|---|---|
| **Engine identification characters** | | **KQM** |
| Manufactured | from | 11.2010 |
| | to | 04.2013 |
| Allocation | Engine | 2.0/81 kW TDI CR |

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## 4.3 Assignment gearbox - engine, Superb II

| Manual gearbox | | 5-speed 0A4 | |
|---|---|---|---|
| **Engine identification characters** | | **LEL** | **JQP** |
| Manufactured | from | 03.2010 | 04.2009 |
| | to | | |
| Allocation | Engine | 1.4/96 kW TSI | 1.8 ltr/118 kW TFSI |

| Manual gearbox | | 5-speed 0A4 | |
|---|---|---|---|
| **Engine identification characters** | | **MTG** | **MDM** |
| Manufactured | from | 09.2010 | 11.2010 |
| | to | 05.2013 | 05.2013 |
| Allocation | Engine | 1.6/77 kW TDI CR | |

| Manual gearbox | | 5-speed 0A4 | |
|---|---|---|---|
| **Engine identification characters** | | **JCR** | **KBL** |
| Manufactured | from | 03.2008 | 07.2008 |
| | to | 11.2010 | 09.2010 |
| Allocation | Engine | 1.9 /77 kW TDI PD | |

## 4.4 Assignment gearbox - engine, Yeti

| Manual gearbox | | 5-speed 0A4 | | |
|---|---|---|---|---|
| **Engine identification characters** | | **PNX** | **QFA** | **STN** |
| Manufactured | from | 10.2013 | 10.2013 | 17.2017 |
| | to | 11.2013 | | |
| Allocation | Engine | 1.4/110 kW TSI | | |

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| Manual gearbox | | 5-speed 0A4 |
|---|---|---|
| **Engine identification characters** | | **LUB** |
| Manufactured | from | 11.2010 |
| | to | 05.2015 |
| Allocation | Engine | 1,6/77 kW TDI CR |

| Manual gearbox | | 5-speed 0A4 | | | |
|---|---|---|---|---|---|
| **Engine identification characters** | | **KJF** | **LZY** | **QXX** | **RSZ** |
| Manufactured | from | 11.2009 | 08.2011 | 05.2015 | 05/2016 |
| | to | 05.2015 | 05.2015 | 05.2016 | |
| Allocation | Engine | 2,0/81 kW TDI CR | | | |

| Manual gearbox | | 5-speed 0A4 | | |
|---|---|---|---|---|
| **Engine identification characters** | | **QTK** | **QYJ** | **RTL** |
| Manu-factured | from | 05.2015 | 05.2015 | 08.2016 |
| | to | 08.2016 | 08.2016 | |
| Alloca-tion | Engine | 2,0/81 kW TDI CR | | |

## 4.5 Calculation of gear ratios

**Example:**

| | 5th gear | Final drive |
|---|---|---|
| Drive wheel | $ZG_1 = 46$ | $ZA_1 = 24$ |
| Output gear | $ZG_2 = 33$ | $ZA_2 = 70$ |

$i = ZG_2 : ZG_1$ [2)]

$i_G$ = gear ratio = $ZG_2:ZG_1 = 33:46 = 0.717$

$i_A$ = axle ratio = $ZA_2:ZA_1 = 70:24 = 2.917$

$i_{total}$ = total ratio = $i_G \times i_A = 0.717 \times 2.917 = 2.091$

2) $Z_1$ = No. of teeth on driving gear, $Z_2$ = No. of teeth on driven gear

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# 5 Overview of Transmission System

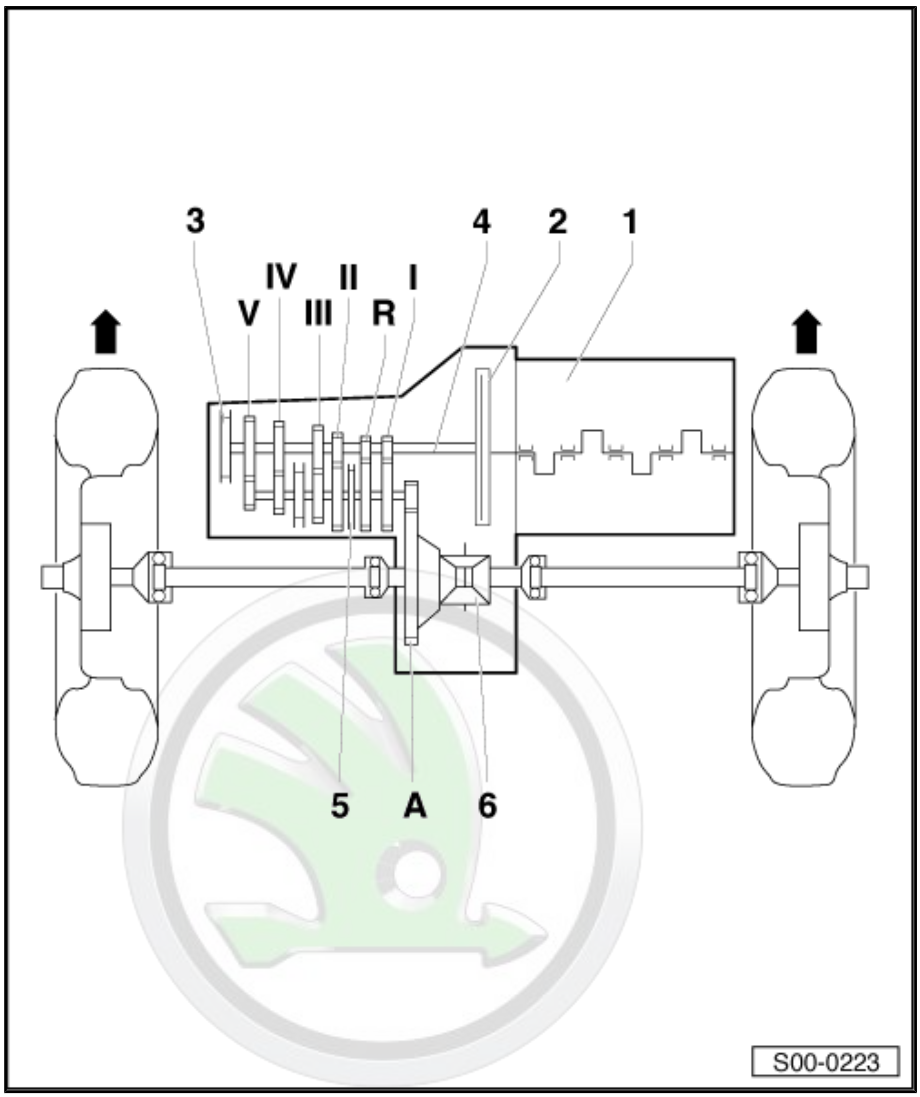
⇒ “5.1 Overview of power transmission - front-wheel drive”, page 10

## 5.1 Overview of power transmission - front-wheel drive

**Note**

*The arrow shows the direction of travel.*

1 - Engine
2 - Clutch
3 - Manual gearbox
4 - Drive shaft
5 - Driveshaft/output shaft
6 - Differential
I - 1st gear
II - 2nd gear
III - 3rd gear
IV - 4th gear
V - 5th gear
R - Reverse gear
A - Final drive




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# 30 – Clutch

## 1 Clutch operation

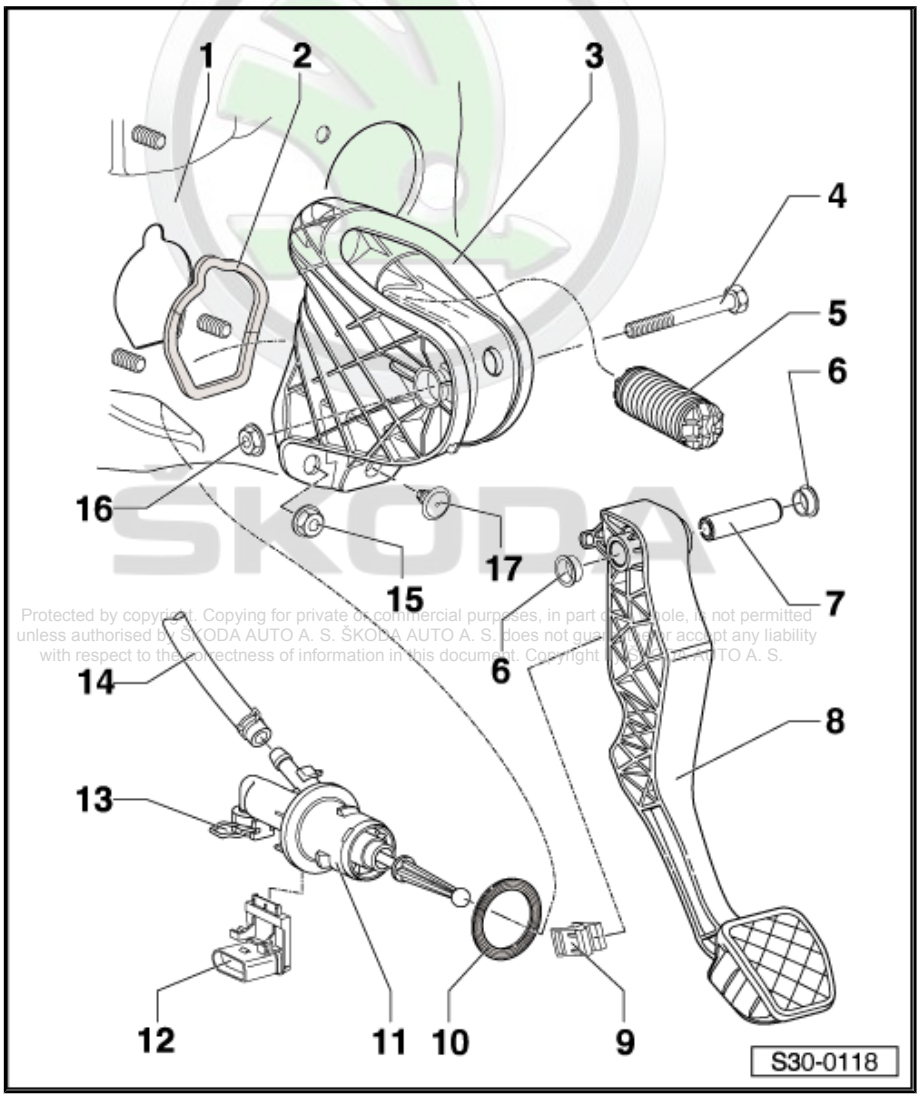
### 1.1 Summary of components - Foot controls

⇒ “1.1.1 Summary of components - Foot controls, Octavia II”, page 11

⇒ “1.1.2 Summary of components - Foot controls, Superb II”, page 13

⇒ “1.1.3 Summary of components - Foot controls, Yeti”, page 14

### 1.1.1 Summary of components - Foot controls, Octavia II




**1 - Front wall**

- ❑ with mount for bracket

**2 - Seal**

- ❑ between bracket and front wall
- ❑ self-adhesive
- ❑ glue to bracket
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**3 - Bearing bracket**

- ❑ for support of clutch pedal
- ❑ removing and installing (Octavia II) ⇒ “1.10 Removing and installing bearing bracket for clutch pedal, Octavia II”, page 27

**4 - Screw**

**5 - Retractor spring**

- ❑ removing and installing (Octavia II) ⇒ “1.4 Removing and installing retractor spring, Octavia II”, page 17

**6 - Bushing**

**7 - Bearing shaft**

**8 - Clutch pedal**

- ❑ removing and installing (Octavia II) ⇒ “1.7 Removing and installing clutch pedal, Octavia II”, page 21

**9 - Support**

- ❑ removing and installing (Octavia II) ⇒ “1.7 Removing and installing clutch pedal, Octavia II”, page 21

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**10 - Seal**

- ❑ between master cylinder and bracket
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**11 - Master cylinder**

- ❑ removing and installing after removing the bracket (Octavia II)
  ⇒ “1.13 Removing and installing master cylinder, Octavia II”, page 35 ]
- ❑ Check for leaks ⇒ “1.20 Check hydraulic clutch control”, page 49

**12 - Clutch position sender - G476-**

- ❑ removing and installing (Octavia II)
  ⇒ “1.16 Removing and installing clutch position sender G476 , Octavia II”, page 41
- ❑ Check ⇒ Vehicle diagnostic tester.

**13 - Clamp**

- ❑ to remove and install the tube-hose line pull out clamp up to the stop

**14 - Supply hose**

- ❑ out of rubber
- ❑ as of 12.05 on certain vehicles out of plastic ⇒ page 48
- ❑ Check for leaks ⇒ “1.20 Check hydraulic clutch control”, page 49

**15 - Nut**

- ❑ 3 units
- ❑ self-locking
- ❑ for bracket on front wall
- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 20 Nm

**16 - Nut**

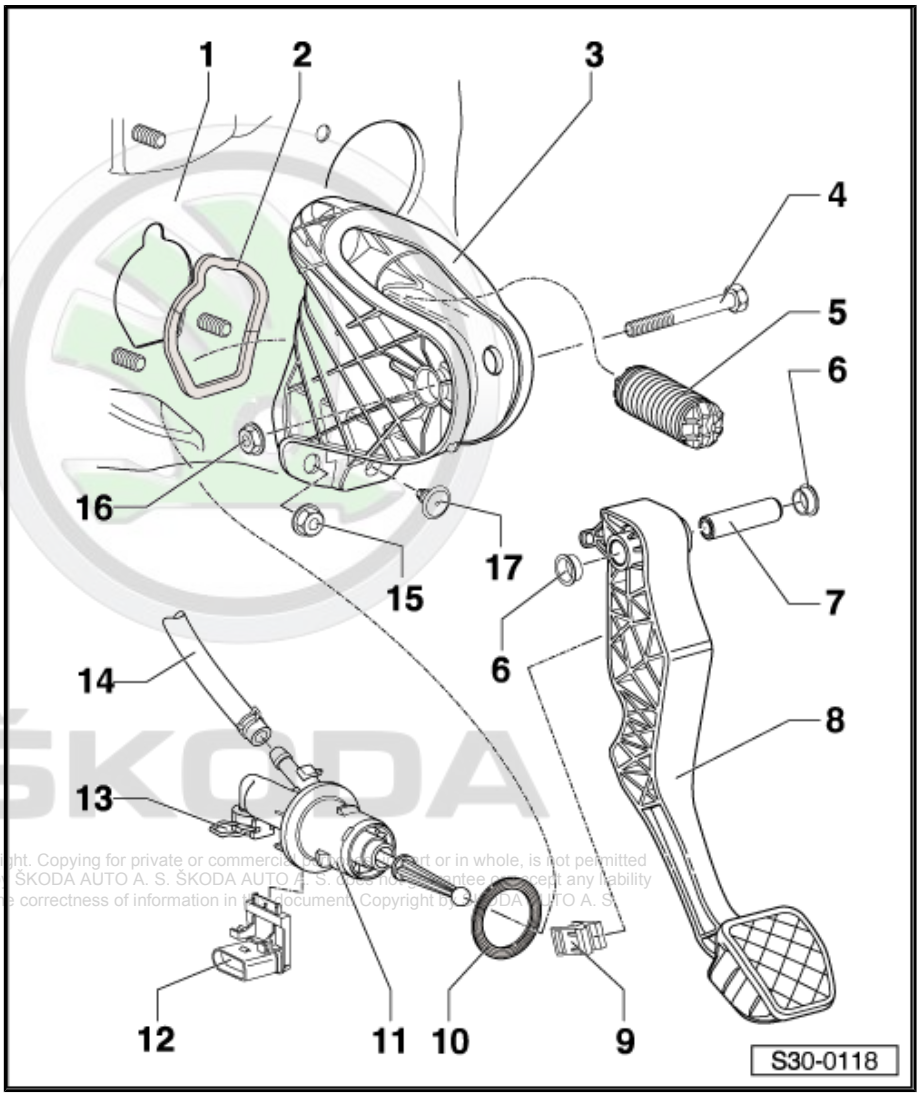
- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 25 Nm

**17 - Stop**

- ❑ for the clutch pedal

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## 1.1.2 Summary of components - Foot controls, Superb II




**1 - Front wall**
- ❑ with mount for bracket

**2 - Seal**
- ❑ between bracket and front wall
- ❑ self-adhesive
- ❑ glue to bracket
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**3 - Bearing bracket**
- ❑ for support of clutch pedal
- ❑ removing and installing (Superb II) ⇒ “1.11 Removing and installing bearing bracket for clutch pedal, Superb II”, page 30

**4 - Screw**

**5 - Retractor spring**
- ❑ removing and installing (Superb II) ⇒ “1.5 Removing and installing retractor spring, Superb II”, page 19

**6 - Bushing**

**7 - Bearing shaft**

**8 - Clutch pedal**
- ❑ removing and installing (Superb II) ⇒ “1.8 Removing and installing clutch pedal, Superb II”, page 23

**9 - Support**
- ❑ removing and installing (Superb II) ⇒ “1.8 Removing and installing clutch pedal, Superb II”, page 23

**10 - Seal**
- ❑ between master cylinder and bracket
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**11 - Master cylinder**
- ❑ removing and installing after removing the bracket (Superb II) ⇒ “1.14 Removing and installing master cylinder, Superb II”, page 37
- ❑ Check for leaks ⇒ “1.20 Check hydraulic clutch control”, page 49

**12 - Clutch position sender - G476-**
- ❑ removing and installing (Superb II) ⇒ “1.17 Removing and installing clutch position sender G476 , Superb II”, page 42
- ❑ Check ⇒ Vehicle diagnostic tester.

**13 - Clamp**
- ❑ to remove and install the tube-hose line pull out clamp up to the stop

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**14 - Supply hose**

- ❑ out of rubber
- ❑ as of 12.05 on certain vehicles out of plastic ⇒ page 48
- ❑ Check for leaks ⇒ “1.20 Check hydraulic clutch control”, page 49

**15 - Nut**

- ❑ 3 units
- ❑ self-locking
- ❑ for bracket on front wall
- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 20 Nm

**16 - Nut**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 25 Nm

**17 - Stop**

- ❑ for the clutch pedal

## 1.1.3 Summary of components - Foot controls, Yeti

**1 - Front wall**

- ❑ with mount for bracket

**2 - Seal**

- ❑ between bracket and front wall
- ❑ self-adhesive
- ❑ glue to bracket
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**3 - Bearing bracket**

- ❑ for support of clutch pedal
- ❑ removing and installing (Yeti) ⇒ “1.12 Removing and installing bearing block for clutch pedal, Yeti”, page 33

**4 - Screw**

**5 - Retractor spring**

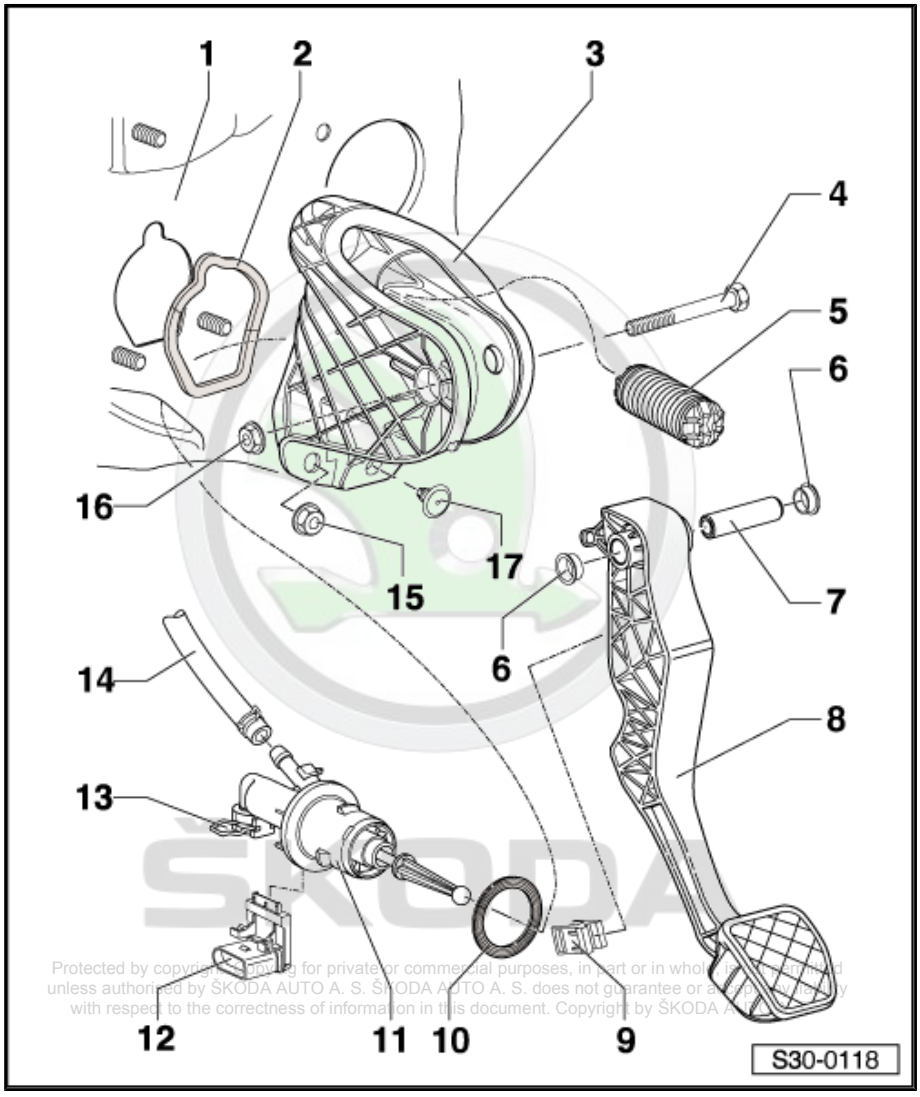
- ❑ removing and installing (Yeti) ⇒ “1.6 Removing and installing retractor spring, Yeti”, page 20

**6 - Bushing**

**7 - Bearing shaft**

**8 - Clutch pedal**

- ❑ removing and installing (Yeti) ⇒ “1.9 Removing and in-




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stalling clutch pedal, Yeti", page 25

**9 - Support**

- ❑ removing and installing (Yeti) ⇒ "1.9 Removing and installing clutch pedal, Yeti", page 25

**10 - Seal**

- ❑ between master cylinder and bracket
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**11 - Master cylinder**

- ❑ removing and installing after removing the bracket (Yeti)
  ⇒ "1.15 Removing and installing master cylinder, Yeti", page 39
- ❑ Check for leaks ⇒ "1.20 Check hydraulic clutch control", page 49

**12 - Clutch position sender - G476-**

- ❑ removing and installing (Yeti)
  ⇒ "1.18 Removing and installing clutch position sender G476 , Yeti", page 44
- ❑ Check ⇒ Vehicle diagnostic tester.

**13 - Clamp**

- ❑ to remove and install the tube-hose line pull out clamp up to the stop

**14 - Supply hose**

- ❑ out of rubber
- ❑ as of 12.05 on certain vehicles out of plastic ⇒ page 48
- ❑ Check for leaks ⇒ "1.20 Check hydraulic clutch control", page 49

**15 - 20 Nm nut**

- ❑ 3 units
- ❑ self-locking
- ❑ for bracket on front wall
- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 20 Nm

**16 - Nut**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 25 Nm

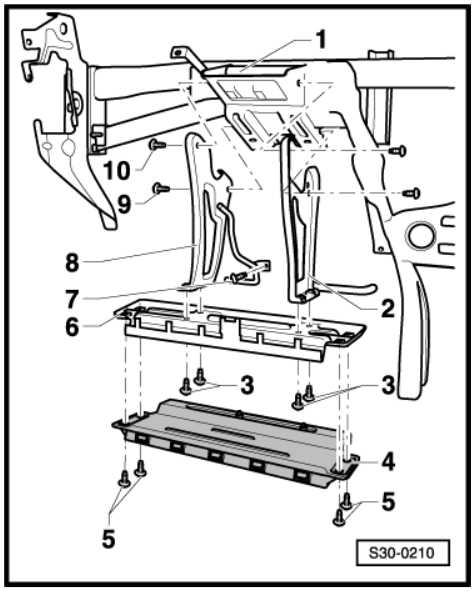
**17 - Stop**

- ❑ for the clutch pedal

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## 1.2 Removing and installing holder for knee airbag with crash strut for clutch pedal, Yeti




**Holder for knee airbag with crash strut for clutch pedal - Summary of components**

1 - Module carrier

2 - Holder for knee airbag with crash strut for brake pedal

3 - 9 Nm

4 - Knee airbag

5 - 7 Nm

6 - Strut for knee airbag

7 - Bolt for the left footwell vent on the driver side: 1.5 Nm

8 - Holder for knee airbag with crash strut for clutch pedal

9 - 9 Nm

10 - 9 Nm

**Removing**

For the removal of the top screw (Pos. 10):

– Removing dash panel insert ⇒ Electrical System; Rep. gr. 90 .

For the removal of the bottom screw (Pos. 9):

– Remove lower part of the dash panel insert on the driver's side ⇒ Body; Rep. gr. 70 Work.

– Release screw for footwell vent on driver's side (Pos. 7).

– Remove the knee airbag ⇒ Body Work; Rep. gr. 69 .

– Remove strut for knee airbag.

– Remove vehicle voltage control unit - J519- , relay carrier above and below the vehicle voltage control unit ⇒ Electrical System; Rep. gr. 97 and expose wiring looms.

  The hoses remain connected.

– Unscrew bottom screw - (Pos. 9) and remove holder for knee airbag with crash strut for clutch pedal (Pos. 8).

**Installing**

Installation is performed in the reverse order, pay attention to the following points:

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– Install vehicle voltage control unit with relay carriers ⇒ Electrical System; Rep. gr. 97 .

– Install knee airbag ⇒ Body Work; Rep. gr. 69 .

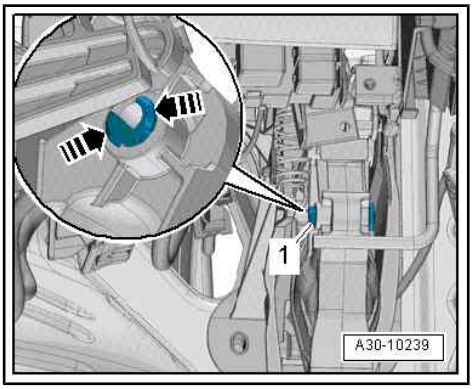
– Install lower part of the dash panel insert on the driver's side ⇒ Body Work; Rep. gr. 70 .

## 1.3 Removing and installing bearing bush

**Removing**

– Disconnect battery earth strap ⇒ Electrical System; Rep. gr. 27 .

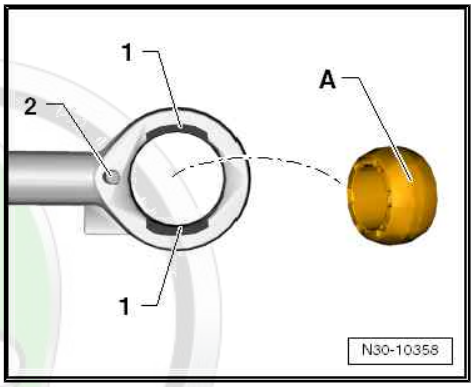
– Press the catches -arrows- together and remove the bolts -1- to the right.




– Turn the master cylinder tappet so that the recesses -1- and bolt -2- are visible.

The recesses -1- and bolts -2- are facing the same direction.

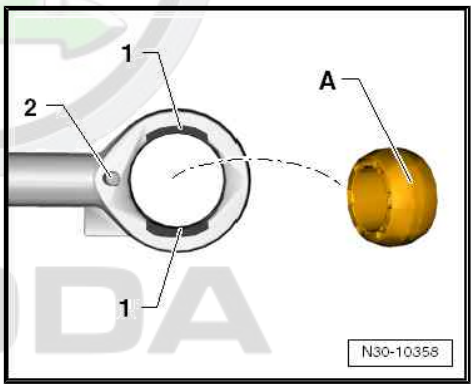
– Remove bearing bush -A- from recesses -1-.




**Installing**

– Turn the master cylinder tappet so that the recesses -1- and bolt -2- are visible.

The recesses -1- and bolts -2- are facing the same direction.




– Fit the bearing bush -A- into the recesses -1- and turn it in the tappet lug until flush.

– Connect the master cylinder tappet with the clutch pedal, to do so use a new carrier bolt ⇒ Electronic catalogue of original parts .

– Connect battery ⇒ Electrical System; Rep. gr. 27 .

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## 1.4 Removing and installing retractor spring, Octavia II

**Special tools and workshop equipment required**

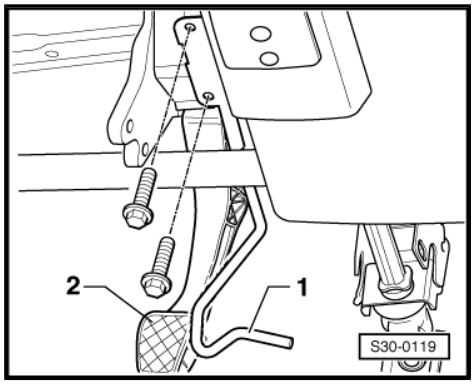
♦ Release tool - T10178-

**Removing**

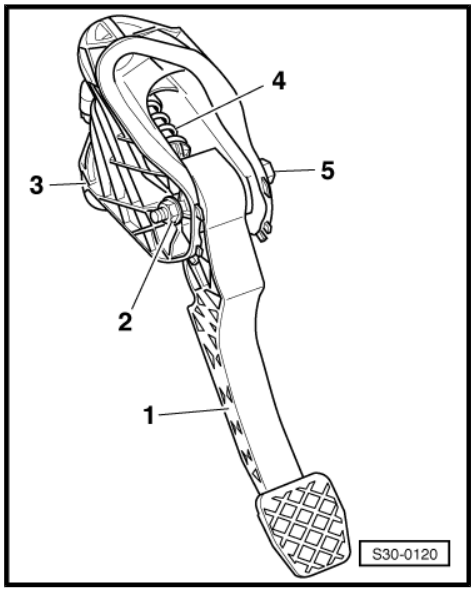
– Push the driver seat as far as possible towards the rear and position the steering wheel in the highest position.

– Remove lower part of the dash panel insert on the driver's side ⇒ Body; Rep. gr. 70 Work.

– Unscrew crash strut -1- in front of the clutch pedal -2-.




– Unscrew clutch pedal -1- from bracket -3-, to this end release nut -2- and pull out screw -5-.




**Note**

*The clutch pedal remains hanging on the actuating rod of the clutch master cylinder.*

– Swivel clutch pedal slightly downwards and remove retractor spring -4- from the bearing bracket.

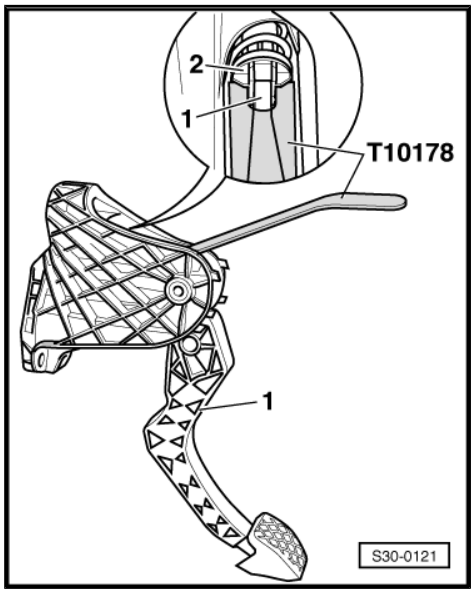
**Installing**

Installation is performed in the reverse order, pay attention to the following points:

**Note**

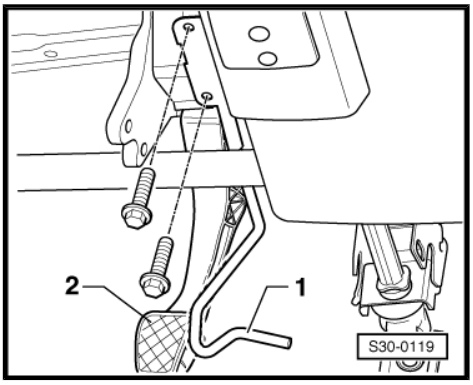
*Replace self-locking nut ⇒ Electronic Catalogue of Original Parts .*

– Insert retractor spring from above into the bearing bracket and while doing so hold the spring end in the fitting position using the release tool - T10178- .
– Insert bearing bolt of clutch pedal into the step bearing of the retractor spring.
– Press on clutch pedal slightly, slide through screw and tighten self-locking nut.




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– Screw on crash strut -1- in front of the clutch pedal -2-.
– Install the damper of the mounting bracket (if present).
– Install lower part of the dash panel insert on the driver's side ⇒ Body Work; Rep. gr. 70 .




**Tightening torques**

| | |
|---|---|
| Clutch pedal to bearing bracket | ⇒ "1.1.1 Summary of components - Foot controls, Octavia II", page 11 |
| Crash strut to bracket/steering column | 9 Nm |

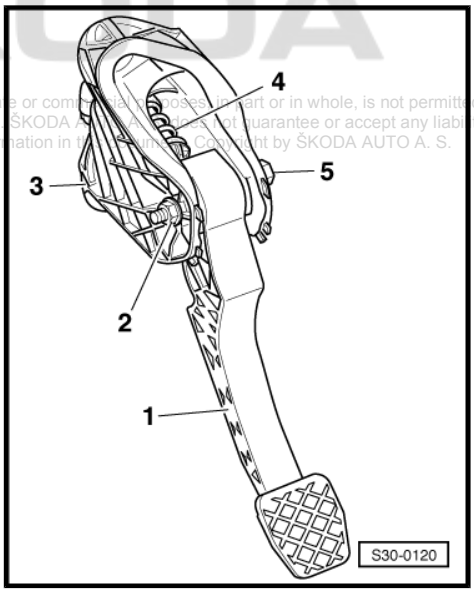
## 1.5 Removing and installing retractor spring, Superb II

**Special tools and workshop equipment required**

♦ Release tool - T10178-

**Removing**

– Push the driver seat as far as possible towards the rear and position the steering wheel in the highest position.
– Remove the storage area on the driver's side and the bottom plastic covering for the steering wheel ⇒ Body Work; Rep. gr. 70 .
– Removing the footwell vent ⇒ Heating and Air Conditioning; Rep. gr. 87 .
– If present, remove the crash strut or the knee airbag ⇒ Body work; Rep. gr. 69 .
– Unscrew clutch pedal -1- from bracket -3-, to this end release nut -2- and pull out screw -5-.




**Note**

*The clutch pedal remains hanging on the actuating rod of the clutch master cylinder.*

– Swivel clutch pedal slightly downwards and remove retractor spring -4- from the bearing bracket.

**Installing**

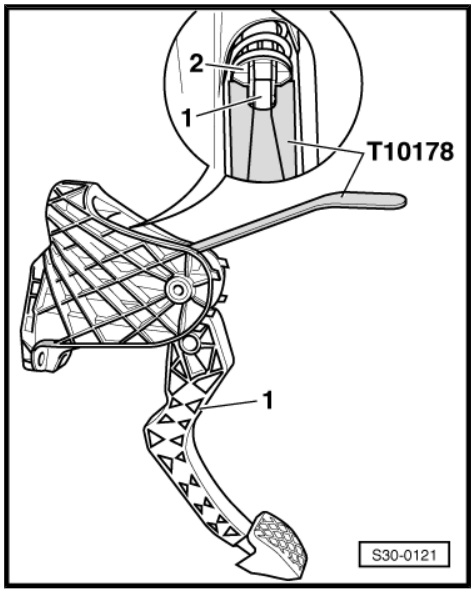
Installation is performed in the reverse order, pay attention to the following points:

**Note**

*Replace self-locking nut.*

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– Insert retractor spring -2- from above into the bracket and while doing so hold the spring end in the fitting position using the release tool - T10178- .
– Insert bearing bolt of clutch pedal into the step bearing of the retractor spring.
– Press on clutch pedal -1- slightly, slide through screw and tighten self-locking nut.
– If present, install the crash strut or the knee airbag ⇒ Body work; Rep. gr. 69 .
– Install the footwell vent ⇒ Heating and Air Conditioning; Rep. gr. 87 .
– Install the storage area on the driver's side and the bottom plastic covering for the steering wheel ⇒ Body Work; Rep. gr. 70 .




**Tightening torque**

| | |
|---|---|
| Clutch pedal to bearing bracket | ⇒ “1.1.2 Summary of components - Foot controls, Superb II”, page 13 |

## 1.6 Removing and installing retractor spring, Yeti

**Special tools and workshop equipment required**

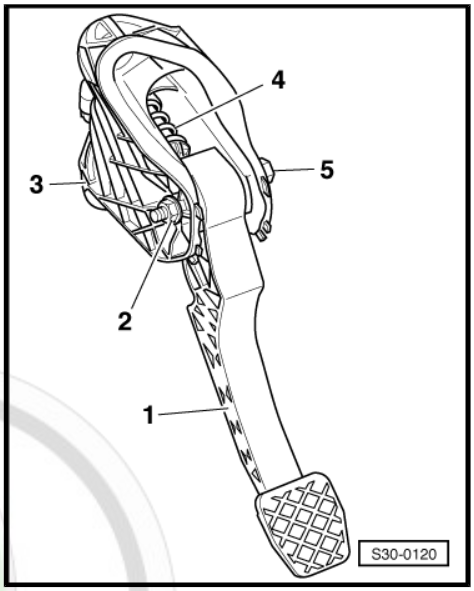
◆ Release tool - T10178-

**Removing**

– Push the driver seat as far as possible towards the rear and position the steering wheel in the highest position.
– Remove holder for knee airbag with crash strut for clutch pedal ⇒ “1.2 Removing and installing holder for knee airbag with crash strut for clutch pedal, Yeti”, page 16 .
– Remove the steering column from the steering gear ⇒ Chassis; Rep. gr. 48 .

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– Unscrew clutch pedal -1- from bracket -3-, to this end release nut -2- and pull out screw -5-.




**Note**

*The clutch pedal remains hanging on the actuating rod of the clutch master cylinder.*

– Swivel clutch pedal slightly downwards and remove retractor spring -4- from the bearing bracket.

### Installing

Installation is performed in the reverse order, pay attention to the following points:

**Note**

*Replace self-locking nut.*

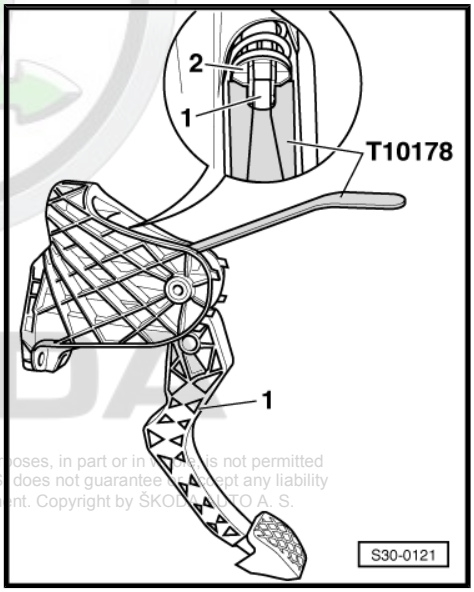
– Insert retractor spring -2- from above into the bracket and while doing so hold the spring end in the fitting position using the release tool - T10178- .

– Insert bearing bolt of clutch pedal into the step bearing of the retractor spring.

– Press on clutch pedal -1- slightly, slide through screw and tighten self-locking nut.

– Secure the steering column to the steering gear with a new screw ⇒ Chassis; Rep. gr. 48 .

– Install holder for knee airbag with crash strut for clutch pedal ⇒ “1.2 Removing and installing holder for knee airbag with crash strut for clutch pedal, Yeti”, page 16 .




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### Tightening torques

| | |
|---|---|
| Clutch pedal to bearing bracket<br>♦ Replace nut | 25 Nm |
| Steering column to steering gear | ⇒ Chassis; Rep. gr. 48 |
| Install holder for knee airbag with crash strut for clutch pedal | ⇒ “1.6 Removing and installing retractor spring, Yeti”, page 20 |

## 1.7 Removing and installing clutch pedal, Octavia II

### Special tools and workshop equipment required

♦ Pliers - T10005-

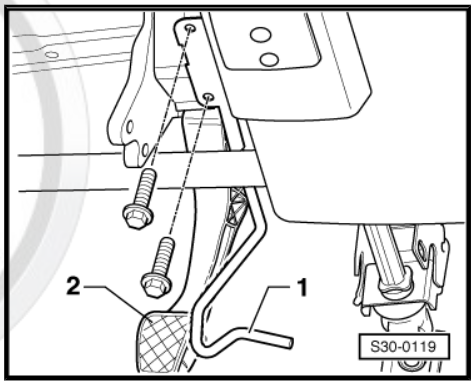
♦ Release tool - T10178-

### Removing

– Push the driver seat as far as possible towards the rear and position the steering wheel in the highest position.

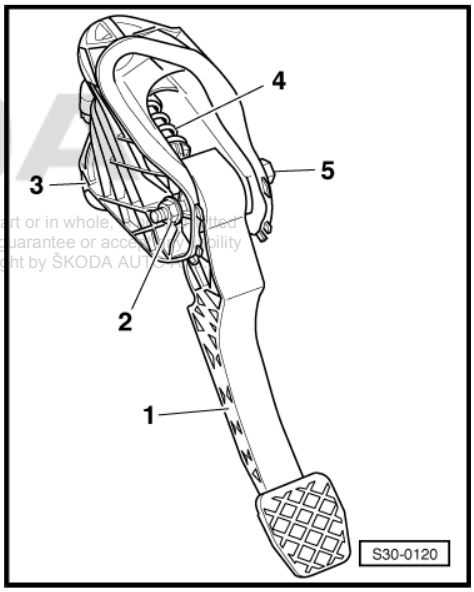
– Remove lower part of the dash panel insert on the driver's side ⇒ Body; Rep. gr. 70 Work.

– Unscrew crash strut -1- in front of the clutch pedal -2-.




– Unscrew clutch pedal -1- from bracket -3-, to this end release nut -2- and pull out screw -5-.

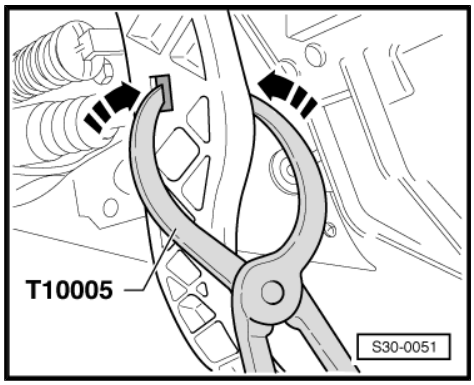
– Swivel clutch pedal forwards slightly, and remove retractor spring -4- from the bearing bracket.




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– Release support of actuating rod of master cylinder with the pliers - T10005- .

– Remove clutch pedal.



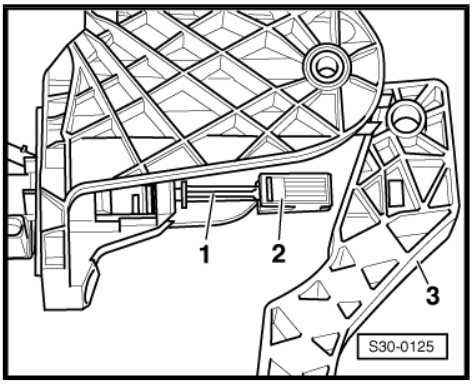

### Installing

Installation is performed in the reverse order, pay attention to the following points:

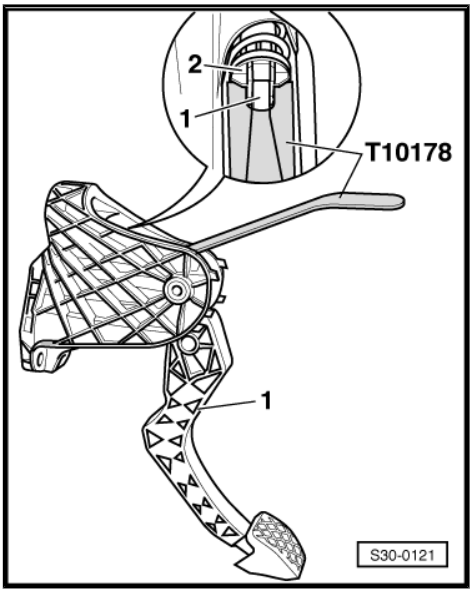
**Note**

*Replace self-locking nut ⇒ Electronic Catalogue of Original Parts .*

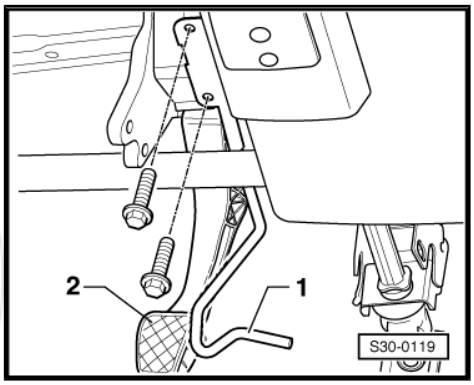
– Mount support -2- to the actuator rod -1- of the master cylinder.
– Press support into the clutch pedal until it audibly clicks into place.




– Insert retractor spring spring from above into the bearing bracket and while doing so hold the spring end in the fitting position using the release tool -T10178- .
– Insert bearing bolt of clutch pedal into the step bearing of the retractor spring.
– Press on clutch pedal slightly, slide through screw and tighten self-locking nut.




– Screw on crash strut -1- in front of the clutch pedal -2-.
– Install the damper of the mounting bracket (if present).
– Install lower part of the dash panel insert on the driver's side ⇒ Body Work; Rep. gr. 70 .




**Tightening torque**

| | |
|---|---|
| Clutch pedal to bearing bracket | ⇒ “1.1.1 Summary of components - Foot controls, Octavia II”, page 11 |
| Crash strut to bracket/steering column | 9 Nm |

## 1.8 Removing and installing clutch pedal, Superb II

**Special tools and workshop equipment required**

- Pliers - T10005-
- Release tool - T10178-

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### Removing

– Push the driver seat as far as possible towards the rear and position the steering wheel in the highest position.

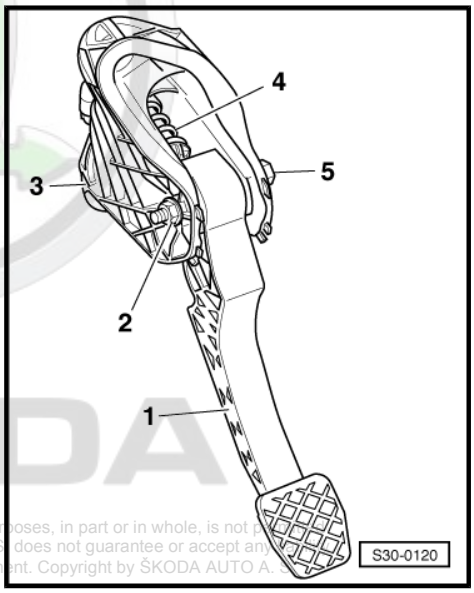
– Remove the storage area on the driver's side and the bottom plastic covering for the steering wheel ⇒ Body Work; Rep. gr. 70 .

– Removing the footwell vent ⇒ Heating and Air Conditioning; Rep. gr. 87 .

– If present, remove the crash strut or the knee airbag ⇒ Body work; Rep. gr. 69 .

– Unscrew clutch pedal -1- from bracket -3-, to this end release nut -2- and pull out screw -5-.

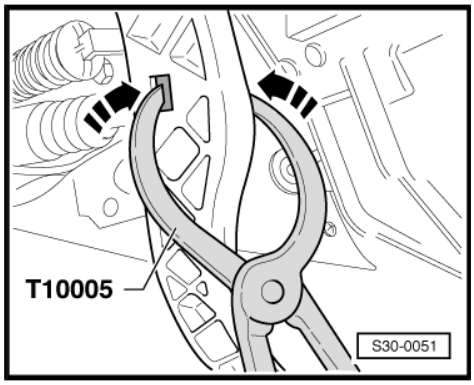
– Swivel clutch pedal forwards slightly, and remove retractor spring -4- from the bearing bracket.




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– Release support of actuating rod of master cylinder with the pliers - T10005- .

– Remove clutch pedal.

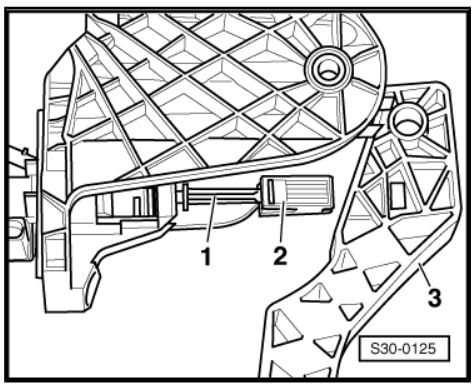



### Installing

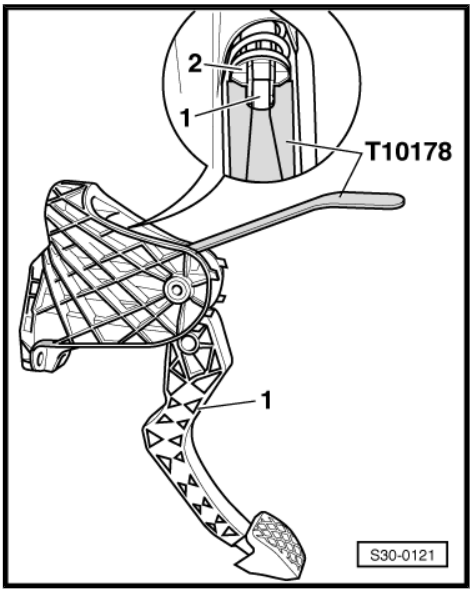
Installation is performed in the reverse order, pay attention to the following points:

– Mount support -2- to the actuator rod -1- of the master cylinder.

– Press support into the clutch pedal until it audibly clicks into place.



- Insert retractor spring from above into the bearing bracket and while doing so hold the spring end in the fitting position using the release tool - T10178- .
- Insert bearing bolt of clutch pedal into the step bearing of the retractor spring.
- Press on clutch pedal slightly, slide through screw and tighten self-locking nut.
- If present, install the crash strut or the knee airbag ⇒ Body work; Rep. gr. 69 .
- Install the footwell vent ⇒ Heating and Air Conditioning; Rep. gr. 87 .
- Install the storage area on the driver's side and the bottom plastic covering for the steering wheel ⇒ Body Work; Rep. gr. 70 .




**Tightening torque**

| | |
|---|---|
| Clutch pedal to bearing bracket | ⇒ “1.1.2 Summary of components - Foot controls, Superb II”, page 13 |

## 1.9 Removing and installing clutch pedal, Yeti

**Special tools and workshop equipment required**

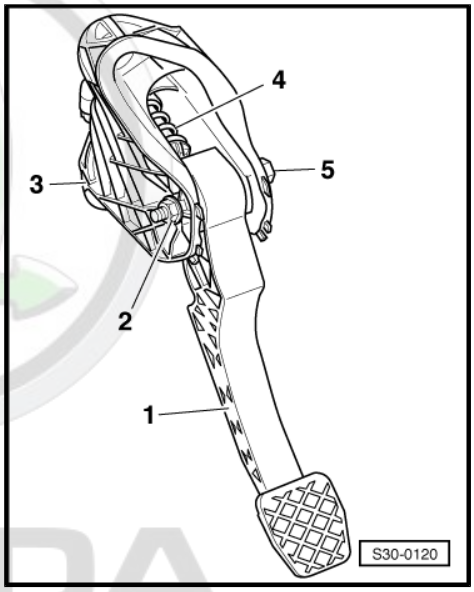
- Pliers - T10005-
- Release tool - T10178-

**Removing**

- Push the driver seat as far as possible towards the rear and position the steering wheel in the highest position.
- Remove holder for knee airbag with crash strut for clutch pedal ⇒ “1.2 Removing and installing holder for knee airbag with crash strut for clutch pedal, Yeti”, page 16
- Remove retractor spring for clutch pedal ⇒ “1.6 Removing and installing retractor spring, Yeti”, page 20
- Remove the steering column from the steering gear ⇒ Chassis; Rep. gr. 48 .

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– Unscrew clutch pedal -1- from bracket -3-, to this end release nut -2- and pull out screw -5-.

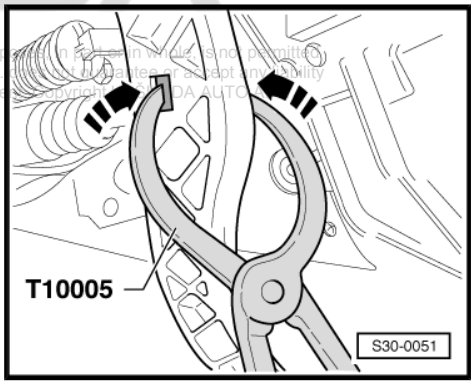



**Note**

– Swivel clutch pedal slightly downwards and remove retractor spring -4- from the bearing bracket.

– Release support of actuating rod of master cylinder with the pliers - T10005- .

– Remove clutch pedal.



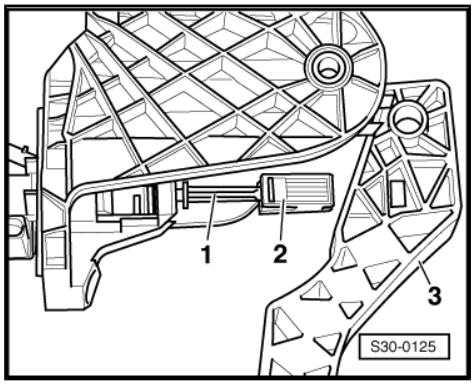

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### Installing

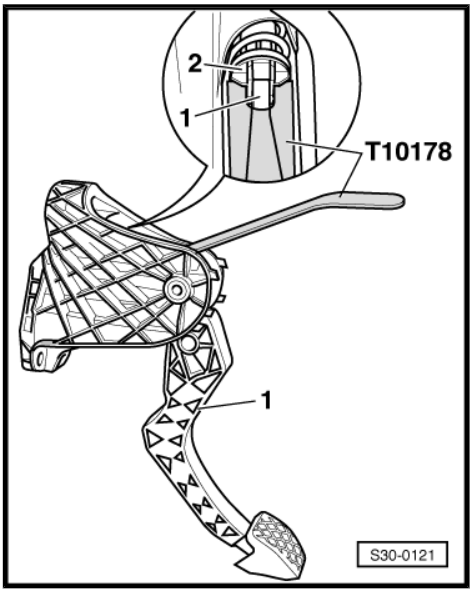
Installation is performed in the reverse order, pay attention to the following points:

– Mount support -2- to the actuator rod -1- of the master cylinder.

– Press support into the clutch pedal until it audibly clicks into place.



– Insert retractor spring from above into the bearing bracket and while doing so hold the spring end in the fitting position using the release tool - T10178- .
– Insert bearing bolt of clutch pedal into the step bearing of the retractor spring.
– Press on clutch pedal slightly, slide through screw and tighten self-locking nut.
– Secure the steering column to the steering gear with a new screw ⇒ Chassis; Rep. gr. 48 .
– Install retractor spring for clutch pedal ⇒ “1.6 Removing and installing retractor spring, Yeti”, page 20
– Install holder for knee airbag with crash strut for clutch pedal ⇒ “1.2 Removing and installing holder for knee airbag with crash strut for clutch pedal, Yeti”, page 16




**Tightening torques**

| | |
|---|---|
| Clutch pedal to bearing bracket<br>♦ Replace nut | 25 Nm |
| Steering column to steering gear | ⇒ Chassis; Rep. gr. 48 |
| Install holder for knee airbag with crash strut for clutch pedal | ⇒ “1.2 Removing and installing holder for knee airbag with crash strut for clutch pedal, Yeti”, page 16 |

## 1.10 Removing and installing bearing bracket for clutch pedal, Octavia II

**Special tools and workshop equipment required**

♦ Pliers - T10005-
♦ Hose clamp - MP7-602 (3094)-
♦ Closing tool - T10249/1-

**Removing**

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Disconnect the battery-earth strap with the ignition off ⇒ Electrical System; Rep. gr. 27 .
– Remove air filter ⇒ Engine; Rep. gr. 23 .
– Remove battery and battery tray ⇒ Electrical System; Rep. gr. 27 .

**Note**

*When performing the following work. make sure that no brake fluid comes into contact with the frame side rail or the gearbox. If this is the case. these points must be cleaned thoroughly.*

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– Clamp off supply hose to master cylinder using hose clamp - MP7-602- -A-.

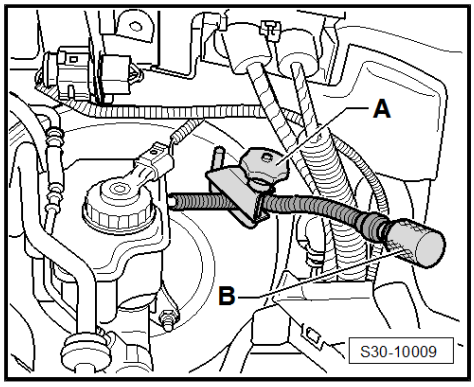
If the plastic return hose with hose clamp - MP7-602- is disconnected, it will be permanently deformed.

The plastic return hose however is not defective.

After the hose clamp - MP7-602 - is removed, the plastic return hose must be returned to its original form.

– Pull off return hose from the clutch master cylinder.

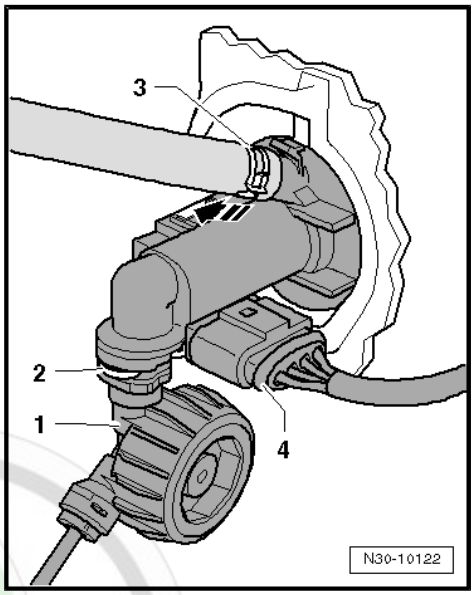
Seal the plastic return hose using the sealing tool - T10249- -B- after its disconnection.




– Unlock the clip -2- with a screwdriver and disconnect the tube-hose line from the connection -1- .

– Close the openings.

– Clip off clutch position sender - G476- at master cylinder -arrow- and remove with attached connector -4-.

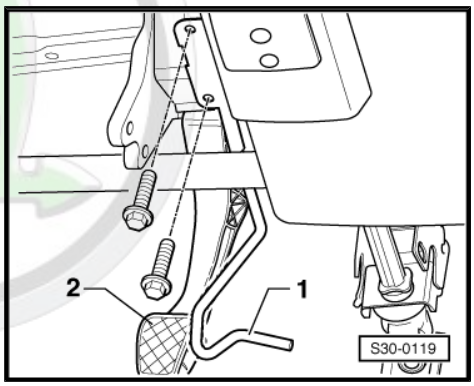



**Note**

*When working in the footwell, protect the floor covering with cloths from escaping brake fluid.*

– Remove lower part of the dash panel insert on the driver's side ⇒ Body; Rep. gr. 70 Work.

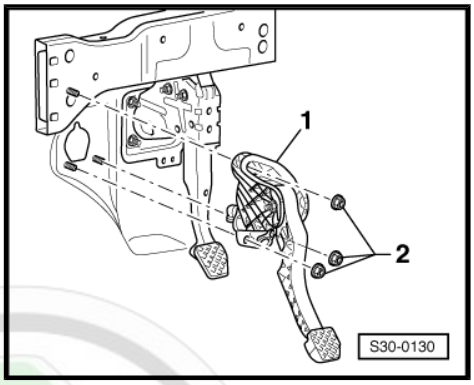
– Unscrew crash strut -1- in front of the clutch pedal -2-.




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– Unscrew the nuts -2-.

– Remove bracket -1-.




### Installing

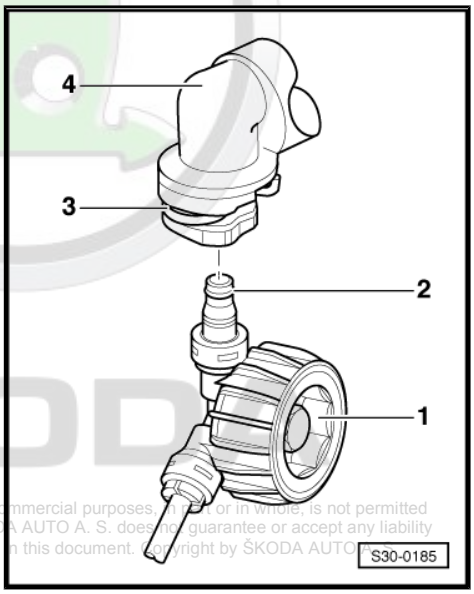
Installation is performed in the reverse order, pay attention to the following points:

**Note**

- *Replace gasket rings ⇒ Electronic Catalogue of Original Parts .*
- *Secure all hose connections with hose clamps which comply with the series design ⇒ Electronic Catalogue of Original Parts .*

– Press in tube-hose line -1- with new gasket ring -2- onto the connection of the master cylinder -4-, until the locking clip -3- is heard to click into position.

Check that it locks in place correctly by pulling on the line -1-.




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– Fit return hose -2- on master cylinder.

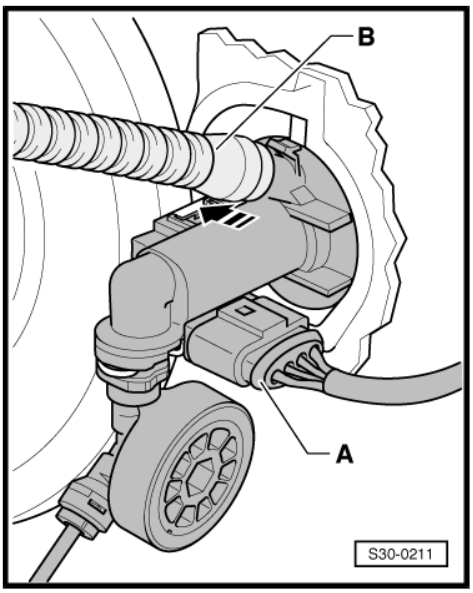
After the hose clamp - MP7-602 - is removed, the plastic return hose must be returned to its original form.

– Bleed the clutch control
⇒ “1.24 Bleeding the clutch control”, page 61 .

– Install the damper of the mounting bracket (if present).

– Install the battery tray and battery ⇒ Electrical System; Rep. gr. 27 .

– Install air filter ⇒ Engine; Rep. gr. 23 .




**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Connect earth strap of battery ⇒ Electrical System; Rep. gr. 27 .

### Tightening torque

| | |
|---|---|
| Bearing bracket | ⇒ “1.1.1 Summary of components - Foot controls, Octavia II”, page 11 |

| | |
|---|---|
| Crash strut to bracket/steering column | 9 Nm |

## 1.11 Removing and installing bearing bracket for clutch pedal, Superb II

**Special tools and workshop equipment required**

- Pliers - T10005-
- Hose clamp - MP7-602 (3094)-
- Closing tool - T10249/1-

**Removing**

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Remove air filter ⇒ Engine; Rep. gr. 23 .
– Remove battery and battery tray ⇒ Electrical System; Rep. gr. 27 .

**Note**

*When performing the following work. make sure that no brake fluid comes into contact with the frame side rail or the gearbox. If this is the case. these points must be cleaned thoroughly.*

– Clamp off supply hose to master cylinder using hose clamp - MP7-602- -A-.

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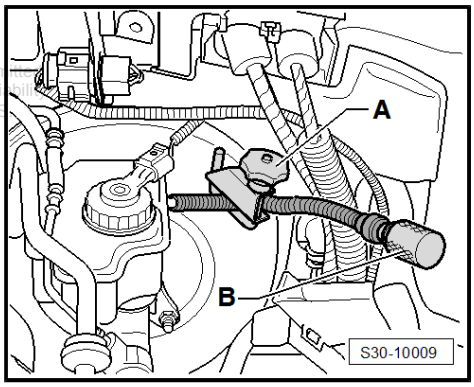
If the plastic return hose with hose clamp - MP7-602- is disconnected, it will be permanently deformed.

The plastic return hose however is not defective.

After the hose clamp - MP7-602 - is removed, the plastic return hose must be returned to its original form.

– Pull off return hose from the clutch master cylinder.

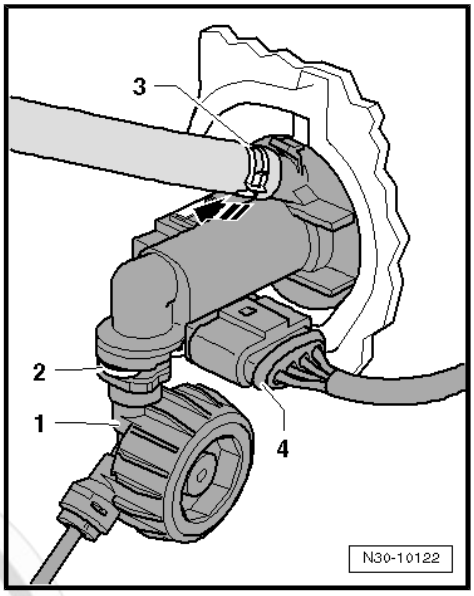
Seal the plastic return hose using the sealing tool - T10249- -B- after its disconnection.



– Unlock the clip -2- with a screwdriver and disconnect the tube-hose line from the connection -1- .

– Close the openings.

– Clip off clutch position sender - G476- at master cylinder -arrow- and remove with attached connector -4-.




**Note**

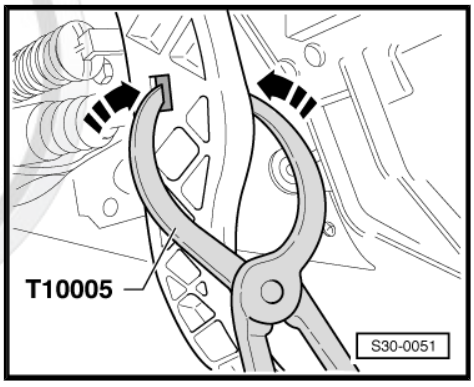
*When working in the footwell, protect the floor covering with cloths from escaping brake fluid.*

– Remove the storage area on the driver's side and the bottom plastic covering for the steering wheel ⇒ Body Work; Rep. gr. 70 .

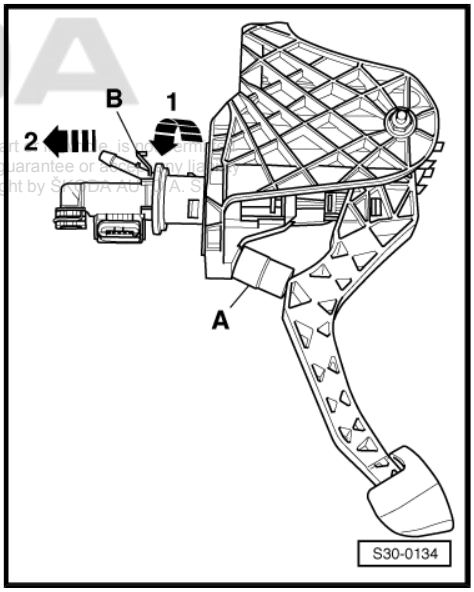
– Removing the footwell vent ⇒ Heating and Air Conditioning; Rep. gr. 87 .

– If present, remove the crash strut or the knee airbag ⇒ Body work; Rep. gr. 69 .

– Release support of actuating rod of master cylinder with the pliers - T10005- .



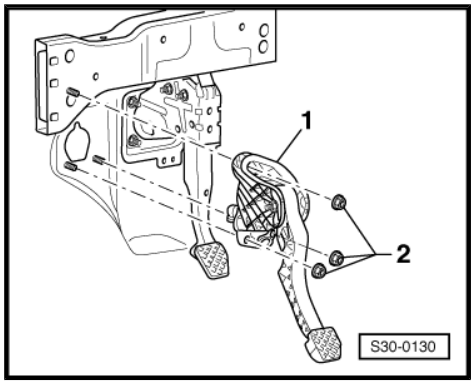

– Release pin -B- and pull master cylinder out of bracket -arrow 1- and -arrow 2-.




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– Unscrew nuts -2-.

– Remove bracket -1-.




### Installing

Installation is performed in the reverse order, pay attention to the following points:

**Note**

- *Replace self-locking nuts.*
- *Replace damaged gasket rings.*

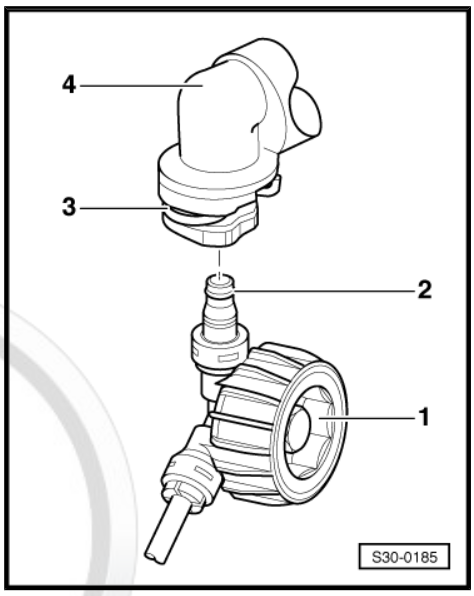
– If present, install the crash strut or the knee airbag ⇒ Body work; Rep. gr. 69 .

– Install the footwell vent ⇒ Heating and Air Conditioning; Rep. gr. 87 .

– Install the storage area on the driver's side and the bottom plastic covering for the steering wheel ⇒ Body Work; Rep. gr. 70 .

– Press in tube-hose line -1- with new gasket ring -2- onto the connection of the master cylinder -4-, until the locking clip -3- is heard to click into position.

Check that it locks in place correctly by pulling on the line -1-.

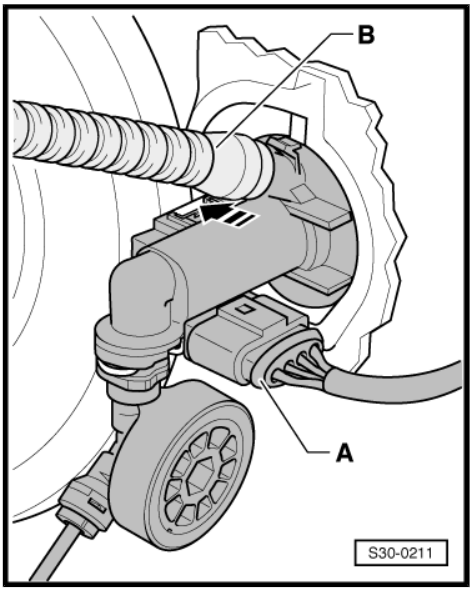



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– Fit return hose -2- on master cylinder.

After the hose clamp - MP7-602 - is removed, the plastic return hose must be returned to its original form.

– Bleed the clutch control
⇒ “1.24 Bleeding the clutch control”, page 61 .
– Install the battery tray and battery ⇒ Electrical System; Rep. gr. 27 .
– Install air filter ⇒ Engine; Rep. gr. 23 .




**Tightening torque**

| | |
|---|---|
| Bracket to body | ⇒ “1.1.2 Summary of components - Foot controls, Superb II”, page 13 |

## 1.12 Removing and installing bearing block for clutch pedal, Yeti

**Special tools and workshop equipment required**

♦ Closing tool - T10249-

**Removing**

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Disconnect the battery-earth strap with the ignition off ⇒ Electrical System; Rep. gr. 27 .
– Remove air filter ⇒ Engine; Rep. gr. 23 .
– Remove battery and battery tray ⇒ Electrical System; Rep. gr. 27 .

**Note**

*When performing the following work. make sure that no brake fluid comes into contact with the frame side rail or the gearbox. If this is the case. these points must be cleaned thoroughly.*

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– Clamp off supply hose to master cylinder using hose clamp - MP7-602- -A-.

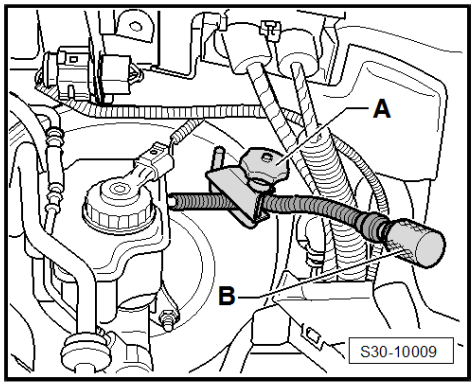
If the plastic return hose with hose clamp - MP7-602- is disconnected, it will be permanently deformed.

The plastic return hose however is not defective.

After the hose clamp - MP7-602 - is removed, the plastic return hose must be returned to its original form.

– Pull off return hose from the clutch master cylinder.

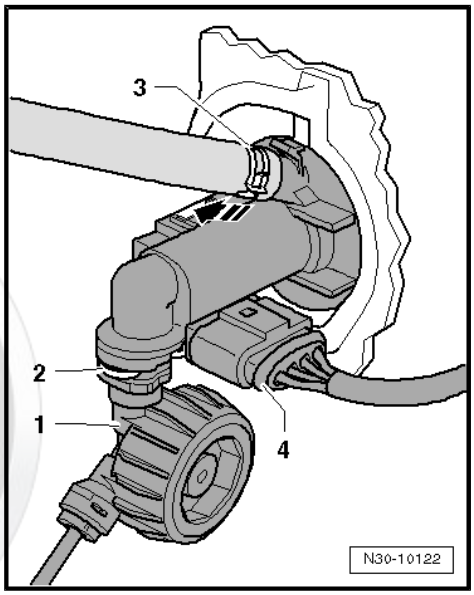
Seal the plastic return hose using the sealing tool - T10249- -B- after its disconnection.




– Unlock the clip -2- with a screwdriver and disconnect the tube-hose line from the connection -1- .

– Close the openings.

– Clip off clutch position sender - G476- at master cylinder -arrow- and remove with attached connector -4-.

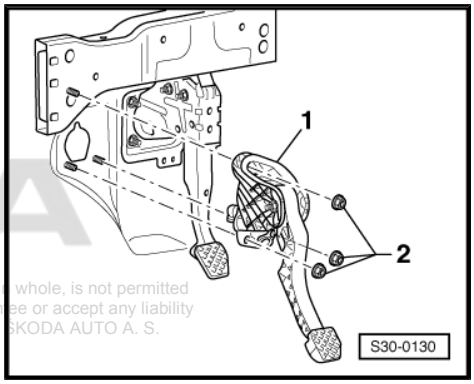



**Note**

*When working in the footwell, protect the floor covering with cloths from escaping brake fluid.*

– Unscrew the nuts -2-.

– Remove bracket -1-.




**Installing**

Installation is performed in the reverse order, pay attention to the following points:

**Note**

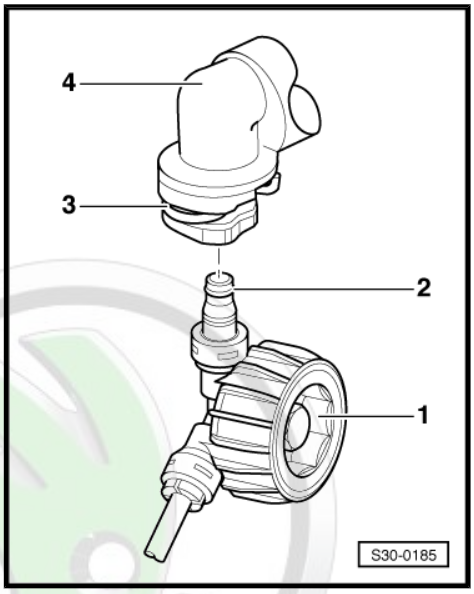
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- *Replace self-locking nuts.*
- *Replace damaged gasket rings.*

– Install holder for knee airbag with crash strut for clutch pedal ⇒ “1.2 Removing and installing holder for knee airbag with crash strut for clutch pedal, Yeti”, page 16 .

– Press in tube-hose line -1- with new gasket ring -2- onto the connection of the master cylinder -4-, until the locking clip -3- is heard to click into position.

Check that it locks in place correctly by pulling on the line -1-.



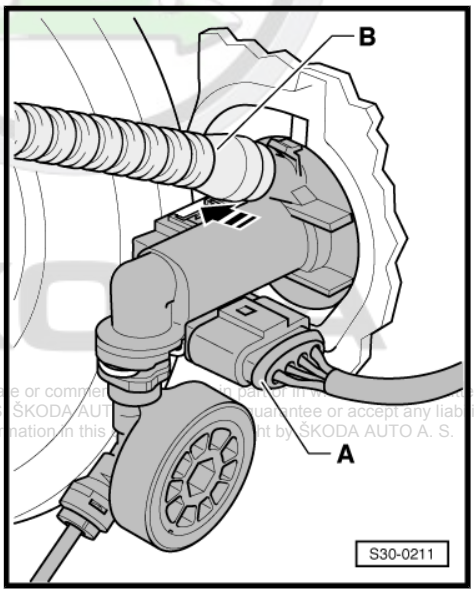

– Fit return hose -2- on master cylinder.

After the hose clamp - MP7-602 - is removed, the plastic return hose must be returned to its original form.

– Bleed the clutch control
⇒ “1.24 Bleeding the clutch control”, page 61 .

– Install the battery tray and battery ⇒ Electrical System; Rep. gr. 27 .

– Install air filter ⇒ Engine; Rep. gr. 23 .




**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Connect earth strap of battery ⇒ Electrical System; Rep. gr. 27 .

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**Tightening torques**

| | |
|---|---|
| Bracket to body<br>♦ Replace nut | 20 Nm |
| Install holder for knee airbag with crash strut for clutch pedal | ⇒ “1.2 Removing and installing holder for knee airbag with crash strut for clutch pedal, Yeti”, page 16 |

## 1.13 Removing and installing master cylinder, Octavia II

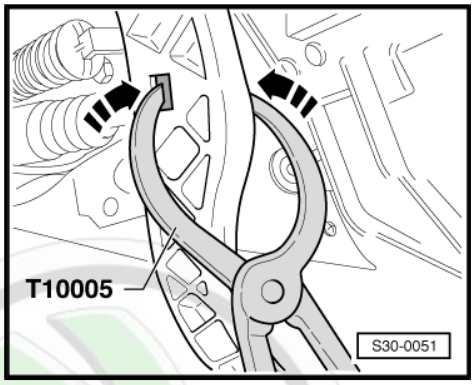
**Special tools and workshop equipment required**

♦ Pliers - T10005-

**Removing**

– Removing bracket
⇒ “1.10 Removing and installing bearing bracket for clutch pedal, Octavia II”, page 27 .

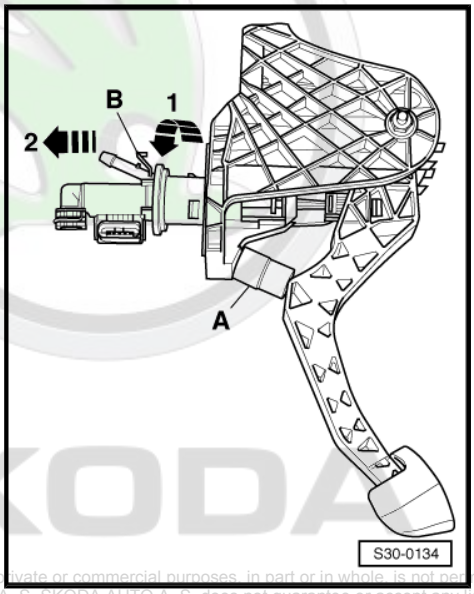
– Release support of actuating rod of master cylinder with the pliers - T10005- .




– Place a spacer -A- between clutch pedal and stop and press clutch pedal forwards.

♦ Length of spacer = approx. 40 mm

– Release pin -B- and pull master cylinder out of bracket -arrow 1- and -arrow 2-.

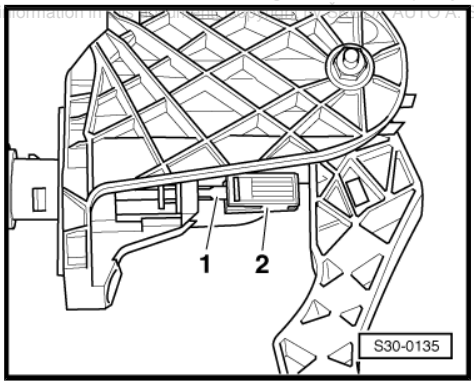



**Installing**

• Move clutch pedal up to the stop into home position.

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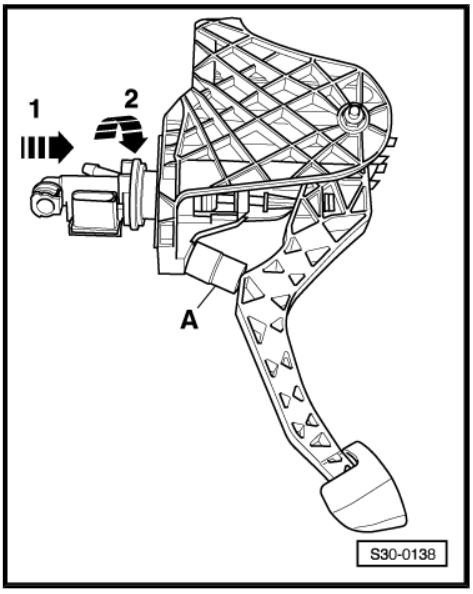
– Mount support -2- to the actuator rod -1- of the master cylinder.



– Place a spacer -A- between clutch pedal and stop and press clutch pedal forwards.

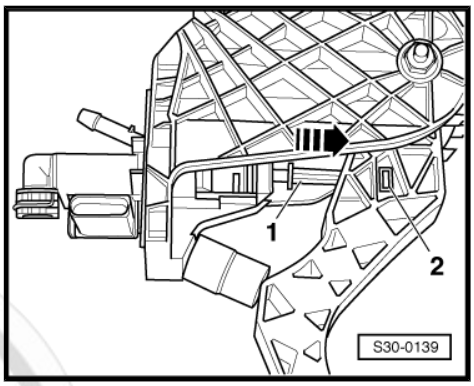
♦ Length of spacer = approx. 40 mm

– Lock master cylinder at bracket -arrow 1- and -arrow 2-.




– Press actuating rod -1- of master cylinder into direction of arrow, until the support -2- locks audibly into the clutch pedal.

– Installing bracket
⇒ “1.10 Removing and installing bearing bracket for clutch pedal, Octavia II”, page 27 .




## 1.14 Removing and installing master cylinder, Superb II

**Special tools and workshop equipment required**

♦ Pliers - T10005-

**Removing**

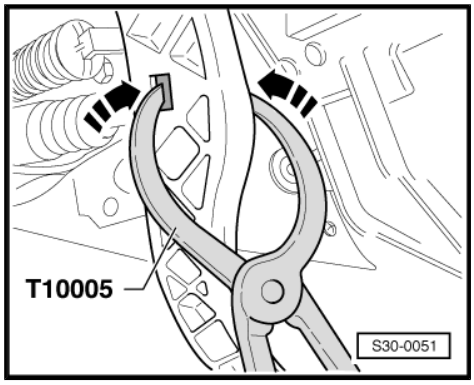
**Note**

*When performing the following work. make sure that no brake fluid comes into contact with the frame side rail or the gearbox. If this is the case. these points must be cleaned thoroughly.*

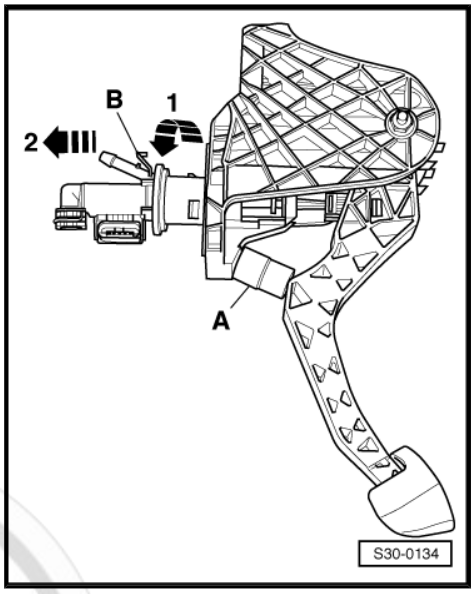
– Remove bearing bracket for clutch pedal
⇒ “1.11 Removing and installing bearing bracket for clutch pedal, Superb II”, page 30 .

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– Release support of actuating rod of master cylinder with the pliers - T10005- .



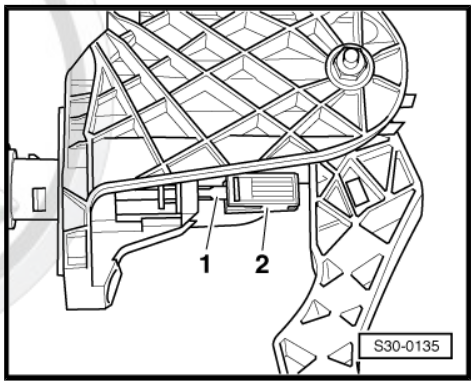

– Release pin -B- and pull master cylinder out of bracket -arrow 1- and -arrow 2-.



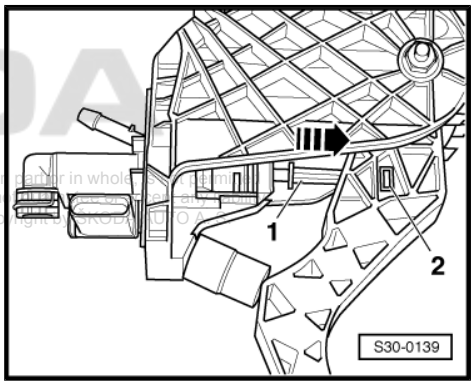

**Installing**

- Move clutch pedal up to the stop into home position.

– Mount support -2- to the actuator rod -1- of the master cylinder.

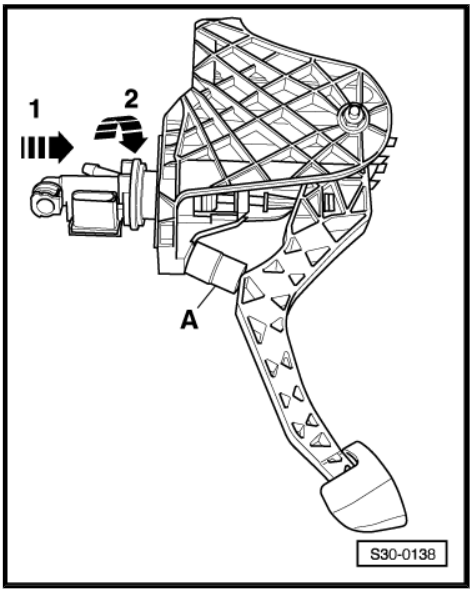



– Press actuating rod -1- of master cylinder into -direction of arrow-, until the support -2- locks audibly into the clutch pedal.




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– Lock master cylinder at bracket -arrow 1- and -arrow 2-.




– Install bearing bracket for clutch pedal
⇒ “1.11 Removing and installing bearing bracket for clutch pedal, Superb II”, page 30 .

– Bleed the clutch control
⇒ “1.24 Bleeding the clutch control”, page 61 .

## 1.15 Removing and installing master cylinder, Yeti

**Special tools and workshop equipment required**

♦ Pliers - T10005-

**Removing**

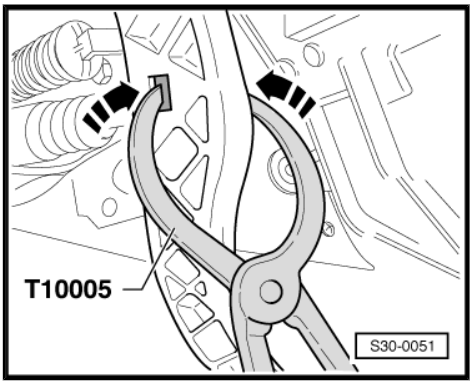
**Note**

*When performing the following work. make sure that no brake fluid comes into contact with the frame side rail or the gearbox. If this is the case. these points must be cleaned thoroughly.*

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– Removing bracket
⇒ “1.12 Removing and installing bearing block for clutch pedal, Yeti”, page 33 .

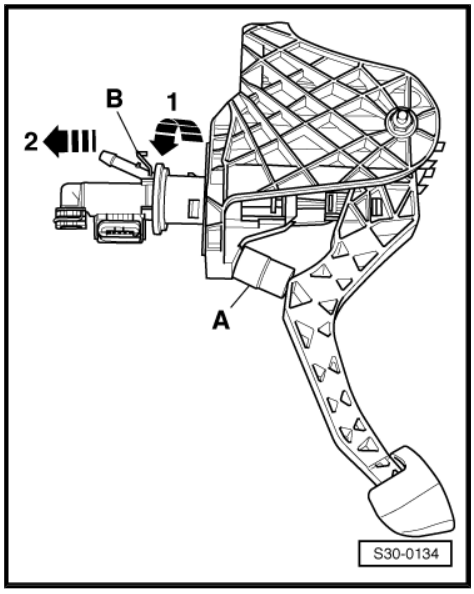
– Release support of actuating rod of master cylinder with the pliers - T10005- .



– Place a spacer -A- between clutch pedal and stop and press clutch pedal forwards.

♦ Length of spacer: 40 mm

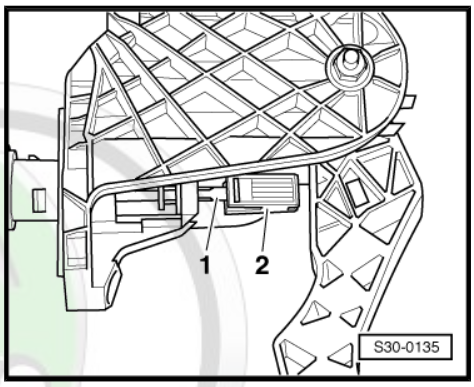
– Release pin -B- and pull master cylinder out of bracket -arrow 1- and -arrow 2-.




### Installing

• Move clutch pedal up to the stop into home position.

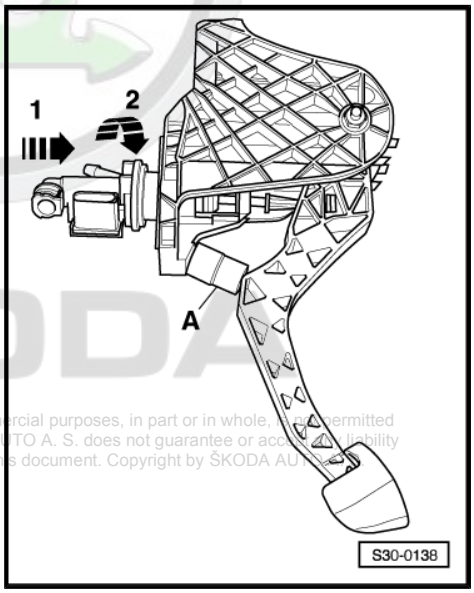
– Mount support -2- to the actuator rod -1- of the master cylinder.




– Place a spacer -A- between clutch pedal and stop and press clutch pedal into operating position.

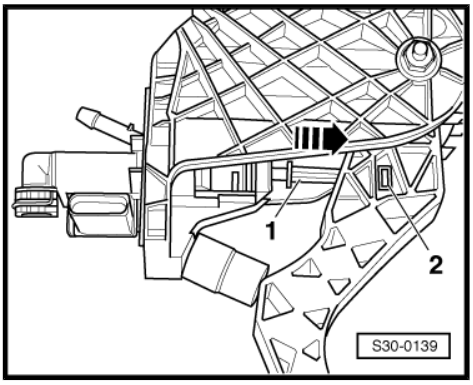
♦ Length of spacer = approx. 40 mm

– Lock master cylinder at bracket -arrow 1- and -arrow 2-.




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– Press actuating rod -1- of master cylinder into direction of arrow, until the support -2- locks audibly into the clutch pedal.
– Installing bracket
⇒ “1.12 Removing and installing bearing block for clutch pedal, Yeti”, page 33 .
– Bleed the clutch control
⇒ “1.24 Bleeding the clutch control”, page 61 .




## 1.16 Removing and installing clutch position sender - G476- , Octavia II

**Special tools and workshop equipment required**

- Hose clamp - MP7-602 (3094)-
- Closing tool - T10249/1-

**Removing**

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Disconnect the battery-earth strap with the ignition off ⇒ Electrical System; Rep. gr. 27 .
– Remove air filter ⇒ Engine; Rep. gr. 23 .
– Remove battery, battery cover and battery tray ⇒ Electrical System; Rep. gr. 27 .

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**Note**

*When performing the following work. make sure that no brake fluid comes into contact with the frame side rail or the gearbox. If this is the case. these points must be cleaned thoroughly.*

– Clamp off supply hose to master cylinder using hose clamp - MP7-602- -A-.

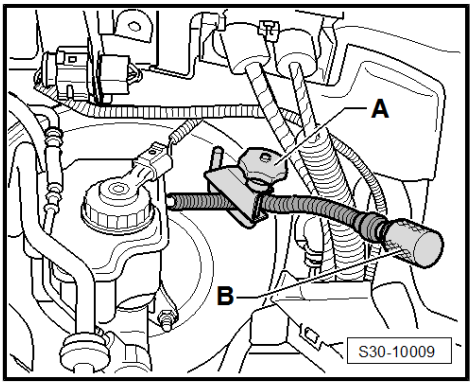
If the plastic return hose with hose clamp - MP7-602- is disconnected, it will be permanently deformed.

The plastic return hose however is not defective.

After the hose clamp - MP7-602 - is removed, the plastic return hose must be returned to its original form.

– Pull off return hose from the clutch master cylinder.

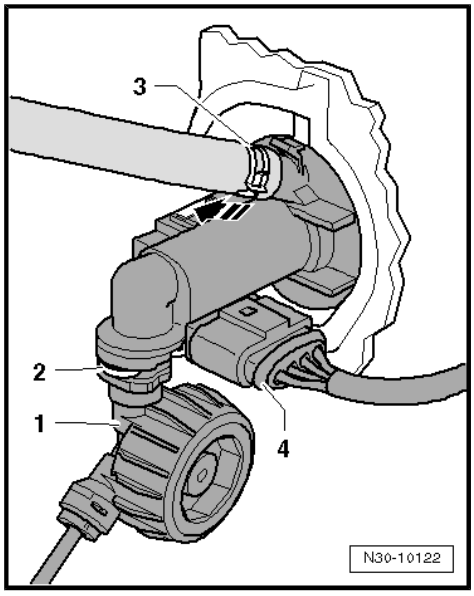
Seal the plastic return hose using the sealing tool - T10249- -B- after its disconnection.



– Unlock the clip -2- with a screwdriver and disconnect the tube-hose line from the connection -1- .

– Close the openings.

– Clip off clutch position sender - G476- at master cylinder -arrow- and remove with attached connector -4-.




**Installing**

Installation is performed in the reverse order, pay attention to the following points:

**Note**

- *Replace gasket rings ⇒ Electronic Catalogue of Original Parts .*
- *Secure all hose connections with hose clamps which comply with the series design ⇒ Electronic Catalogue of Original Parts .*

If the tube-hose line was removed:

– After installing the tube-hose line, pull on this line for checking.

– After the hose clamp - MP7-602 - is removed, the plastic return hose must be returned to its original form.

– Bleed the clutch control
⇒ “1.24 Bleeding the clutch control”, page 61 .

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– Install the battery tray and battery ⇒ Electrical System; Rep. gr. 27 .

– Install air filter ⇒ Engine; Rep. gr. 23 .

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Connect earth strap of battery ⇒ Electrical System; Rep. gr. 27 .

## 1.17 Removing and installing clutch position sender - G476- , Superb II

**Special tools and workshop equipment required**

- Closing tool - T10249/1-

**Removing**

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Remove air filter ⇒ Engine; Rep. gr. 23 .

– Remove battery, battery cover and battery tray ⇒ Electrical System; Rep. gr. 27 .

– Clamp off supply hose to master cylinder using hose clamp - MP7-602- -A-.

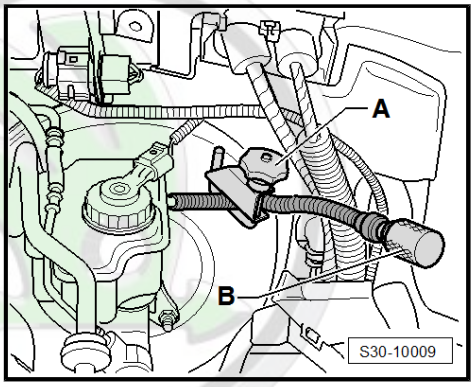
If the plastic return hose with hose clamp - MP7-602- is disconnected, it will be permanently deformed.

The plastic return hose however is not defective.

After the hose clamp - MP7-602 - is removed, the plastic return hose must be returned to its original form.

– Pull off return hose from the clutch master cylinder.

Seal the plastic return hose using the sealing tool - T10249- -B- after its disconnection.

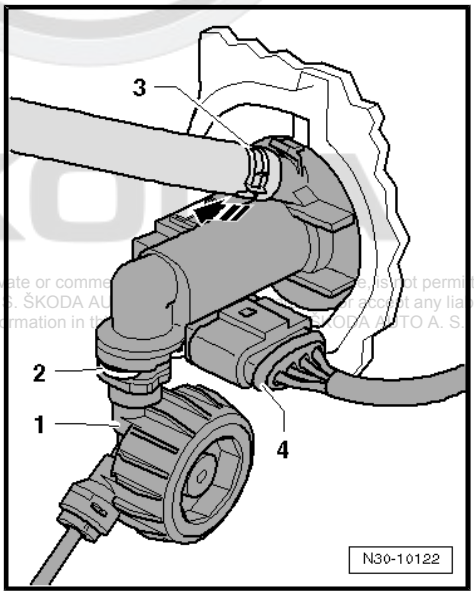



– Unlock the clip -2- with a screwdriver and disconnect the tube-hose line from the connection -1- .

– Close the openings.

– Clip off clutch position sender - G476- at master cylinder -arrow- and remove with attached connector -4-.

– Separate electrical plug connection -4-.




### Installing

Installation is performed in the reverse order, pay attention to the following points:

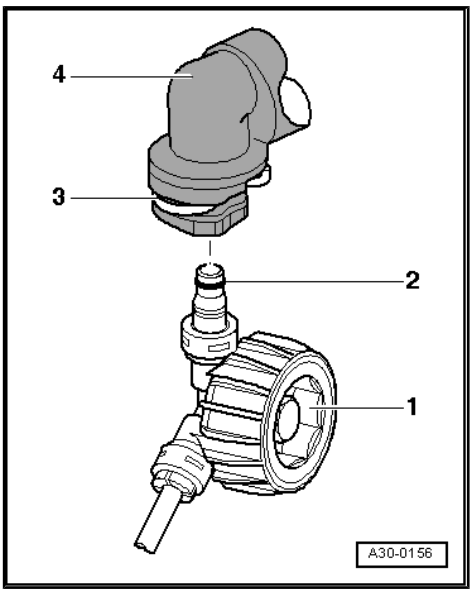
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**Note**

- *Replace damaged gasket rings.*
- *Assign all the components via the ⇒ Electronic Catalogue of Original Parts .*

– Fit tube-hose line and/or plastic line -1- with gasket ring -2- onto the connection of the master cylinder -4-, until the locking clip -3- is heard to click into position.

– Check that it locks in place correctly by pulling on the line -1-.




**Note**

- *Replace gasket rings ⇒ Electronic Catalogue of Original Parts .*
- *Secure all hose connections with hose clamps which comply with the series design ⇒ Electronic Catalogue of Original Parts .*

If the tube-hose line was removed:

– After installing the tube-hose line, pull on this line for checking.

– After the hose clamp - MP7-602 - is removed, the plastic return hose must be returned to its original form.

– Bleed the clutch control
⇒ “1.24 Bleeding the clutch control”, page 61 .

– Install the battery tray and battery ⇒ Electrical System; Rep. gr. 27 .

– Install air filter ⇒ Engine; Rep. gr. 23 .

# 1.18 Removing and installing clutch position sender - G476- , Yeti

## Removing

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Remove air filter ⇒ Engine; Rep. gr. 23 .

– Remove battery, battery cover and battery tray ⇒ Electrical System; Rep. gr. 27 .

– Clamp off supply hose to master cylinder using hose clamp - MP7-602- -A-.

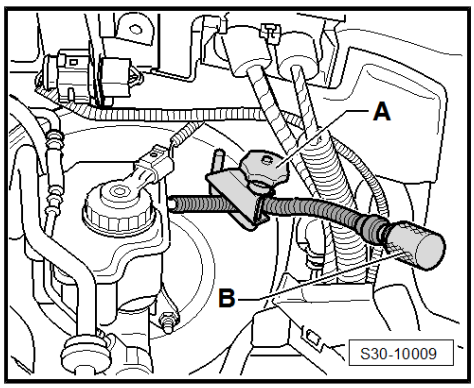
If the plastic return hose with hose clamp - MP7-602- is disconnected, it will be permanently deformed.

The plastic return hose however is not defective.

After the hose clamp - MP7-602 - is removed, the plastic return hose must be returned to its original form.

– Pull off return hose from the clutch master cylinder.

Seal the plastic return hose using the sealing tool - T10249- -B- after its disconnection.

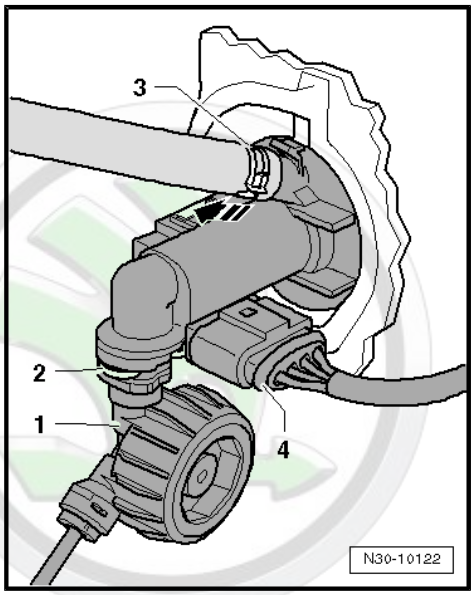



– Unlock the clip -2- with a screwdriver and disconnect the tube-hose line from the connection -1- .

– Close the openings.

– Clip off clutch position sender - G476- at master cylinder -arrow- and remove with attached connector -4-.

– Separate electrical plug connection -4-.




## Installing

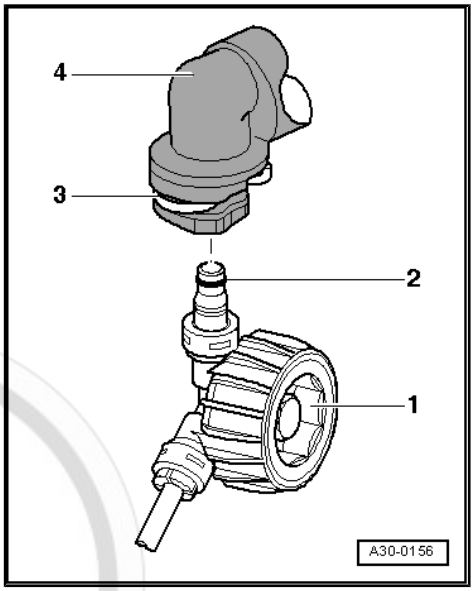
Installation is performed in the reverse order, pay attention to the following points:

**Note**

- *Replace damaged gasket rings.*
- *Assign all the components via the ⇒ Electronic Catalogue of Original Parts .*

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– Fit tube-hose line and/or plastic line -1- with gasket ring -2- onto the connection of the master cylinder -4-, until the locking clip -3- is heard to click into position.
– Check that it locks in place correctly by pulling on the line -1-.




**Note**

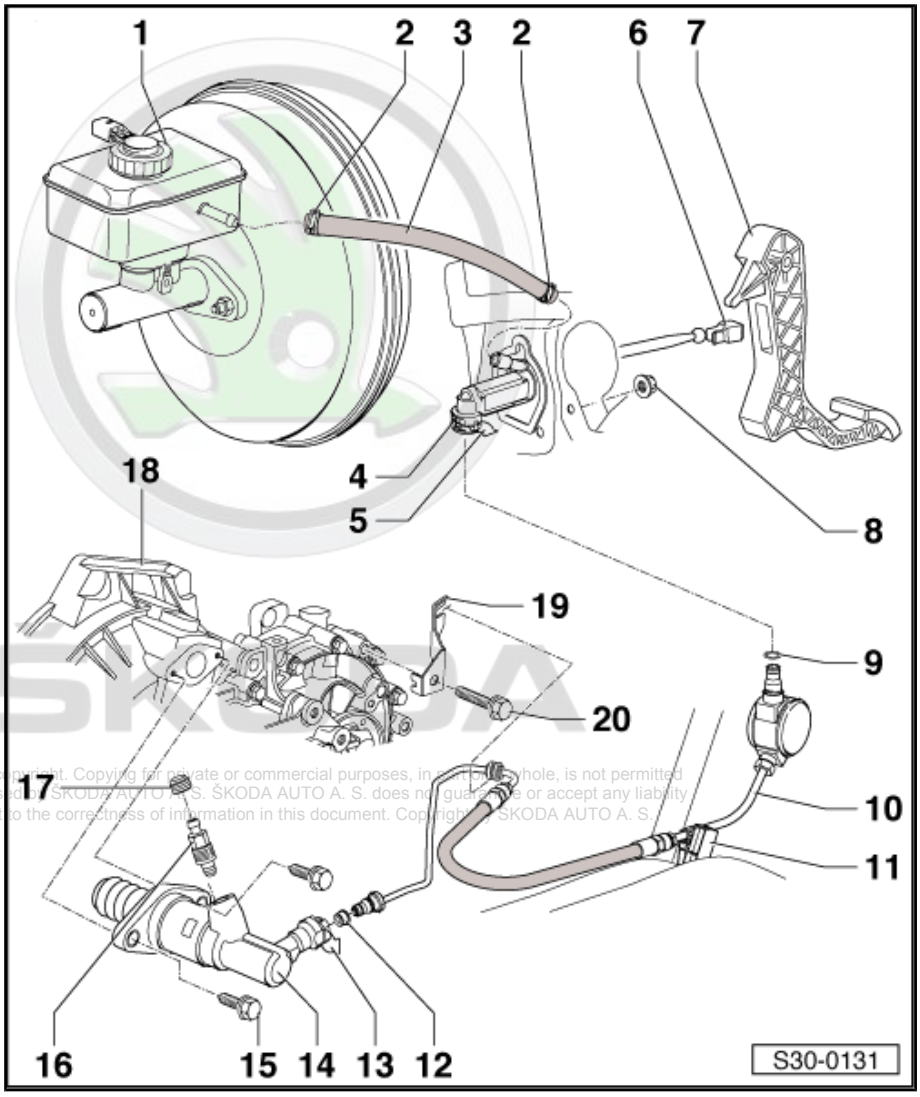
- *Replace gasket rings ⇒ Electronic Catalogue of Original Parts .*
- *Secure all hose connections with hose clamps which comply with the series design ⇒ Electronic Catalogue of Original Parts .*

If the tube-hose line was removed:

– After installing the tube-hose line, pull on this line for checking.
– After the hose clamp - MP7-602 - is removed, the plastic return hose must be returned to its original form.
– Install the battery tray and battery ⇒ Electrical System; Rep. gr. 27 .
– Install air filter ⇒ Engine; Rep. gr. 23 .

## 1.19 Summary of components - Hydraulics, Octavia II, Superb II, Yeti

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**1 - Brake fluid reservoir**

- ❑ Check for leaks ⇒ “1.20 Check hydraulic clutch control”, page 49

**2 - Spring strap clamp**

- ❑ is not installed on all vehicles

**3 - Supply hose**

- ❑ out of rubber
- ❑ as of 12.05 on certain vehicles out of plastic ⇒ page 48
- ❑ Check for leaks ⇒ “1.20 Check hydraulic clutch control”, page 49

**4 - Master cylinder**

- ❑ removing and installing (Octavia II) ⇒ “1.13 Removing and installing master cylinder, Octavia II”, page 35
- ❑ removing and installing (Superb II) ⇒ “1.14 Removing and installing master cylinder, Superb II”, page 37
- ❑ removing and installing (Yeti) ⇒ “1.15 Removing and installing master cylinder, Yeti”, page 39
- ❑ Check for leaks ⇒ “1.20 Check hydraulic clutch control”, page 49

**5 - Clamp**

- ❑ to remove and install the tube-hose line pull out clamp up to the stop

**6 - Support**

- ❑ removing and installing (Octavia II) ⇒ “1.7 Removing and installing clutch pedal, Octavia II”, page 21
- ❑ removing and installing (Superb II) ⇒ “1.8 Removing and installing clutch pedal, Superb II”, page 23
- ❑ removing and installing (Yeti) ⇒ “1.9 Removing and installing clutch pedal, Yeti”, page 25

**7 - Clutch pedal**

- ❑ removing and installing (Octavia II) ⇒ “1.7 Removing and installing clutch pedal, Octavia II”, page 21
- ❑ removing and installing (Superb II) ⇒ “1.8 Removing and installing clutch pedal, Superb II”, page 23
- ❑ removing and installing (Yeti) ⇒ “1.9 Removing and installing clutch pedal, Yeti”, page 25

**8 - Nut**

- ❑ 3 units
- ❑ Bracket to body
- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 20 Nm

**9 - O-ring**

- ❑ pull onto line connection
- ❑ moisten with brake fluid to install

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- ❑ do not interchange, the O-rings Pos. 9 and Pos. 12 are different ⇒ page 48
- ❑ Assignment ⇒ Electronic Catalogue of Original Parts
- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ Check for leaks ⇒ “1.20 Check hydraulic clutch control”, page 49

**10 - Tube-hose line**

- ❑ Assignment ⇒ Electronic Catalogue of Original Parts
- ❑ Remove battery and battery tray for removing ⇒ Electrical System; Rep. gr. 27
- ❑ Check for leaks ⇒ “1.20 Check hydraulic clutch control”, page 49

**11 - Mounting bracket**

- ❑ mounted at the structure
- ❑ for tube-hose line Pos. 10

**12 - O-ring**

- ❑ pull onto line connection
- ❑ moisten with brake fluid before installing
- ❑ do not interchange, the O-rings Pos. 9 and Pos. 12 are different ⇒ page 48
- ❑ Assignment ⇒ Electronic Catalogue of Original Parts
- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ Check for leaks ⇒ “1.20 Check hydraulic clutch control”, page 49

**13 - Clamp**

- ❑ to remove and install the tube-hose line pull out clamp up to the stop

**14 - Slave cylinder**

- ❑ removing and installing (Octavia II)
  ⇒ “1.21 Removing and installing slave cylinder, Octavia II”, page 50
- ❑ removing and installing (Superb II)
  ⇒ “1.22 Removing and installing slave cylinder, Superb II”, page 54
- ❑ removing and installing (Yeti) ⇒ “1.23 Removing and installing slave cylinder, Yeti”, page 58
- ❑ Check for leaks ⇒ “1.20 Check hydraulic clutch control”, page 49

**15 - Screw**

- ❑ 20 Nm

**16 - Vent valve**

- ❑ pay attention to different versions. assign via ⇒ Electronic Catalogue of Original Parts
- ❑ Bleeding the clutch control ⇒ “1.24 Bleeding the clutch control”, page 61
- ❑ Check for leaks ⇒ “1.20 Check hydraulic clutch control”, page 49

**17 - Dust cap**

**18 - Gearbox**

**19 - Mounting bracket**

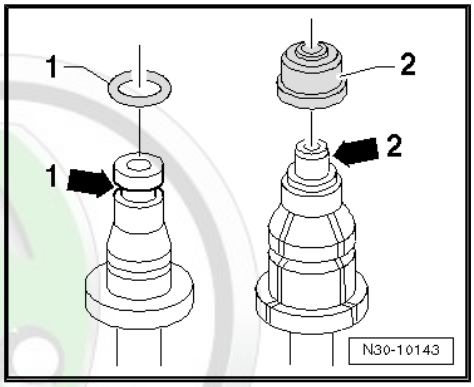
**20 - Screw**

- ❑ 20 Nm

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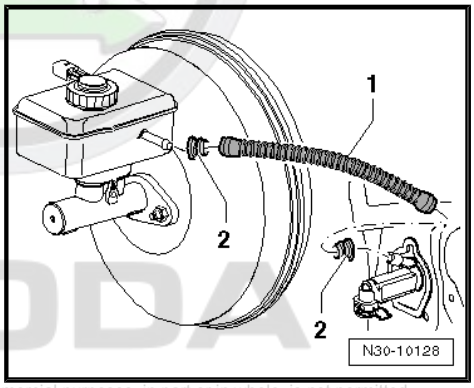
**Gasket rings / O-rings for tube-hose lines and/or plastic line**

- -1- Line connection with circular slot -arrow 1-
- -2- Line connection with collar -arrow 2-



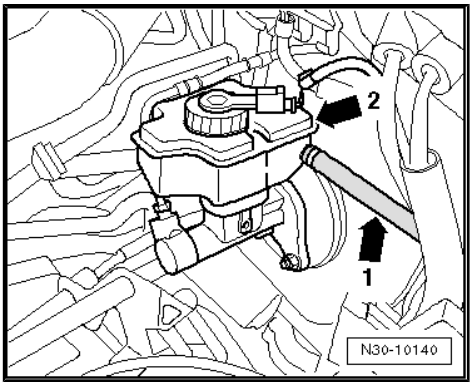

**as of 12.05 on certain vehicles plastic return hose -1-**

- Gaskets -2- must be present in the return hose




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## 1.20 Check hydraulic clutch control




**Note**

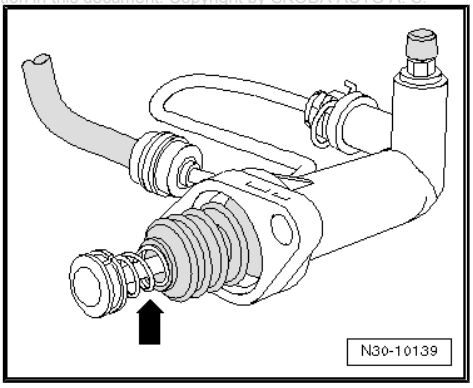
- *If the master cylinder and/or slave cylinder must be replaced due to the predetermined fault, first of all check the hydraulic clutch control.*
- *If the slave cylinder with the connected tube-hose line is removed from the gearbox, do no longer depress the clutch pedal. Otherwise, the piston can be pressed out of the slave cylinder and thus be destroyed.*
- *The hydraulic clutch control is connected to one of the chambers -arrow 2- of the brake fluid reservoir by the return hose -arrow 1-.*
- *If there is little or no brake fluid in this chamber, there is a leak in the system.*
- *Symptoms of an external leak are, amongst others, traces of brake fluid on or below the gearbox, as well as on the noise insulation under the gearbox.*
- *In case of leakage, the corresponding component must be replaced ⇒ Electronic Catalogue of Original Parts .*
- *Check the correct routing of the tube-hose line between the master and slave cylinder. The line must not be kinked or trapped.*
- *The brake pedal return must not be obstructed by moved or additional covers (floor coverings).*

**Inspect the complete hydraulic system for leaks.**

– Carry out a visual inspection of the following components of the hydraulic clutch control for leaks:

- Check brake fluid level in the brake fluid reservoir
- Return hose between brake fluid reservoir and master cylinder
- Master cylinder
- Tube-hose line between master and slave cylinder
- Connection points (plug and screw connections) also in a non-visible area
- Slave cylinder

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– Remove the slave cylinder (do not open the line system) and check if no brake fluid drips out of the bellows, to do so remove the bellows from the rod -arrow-.

– Bleeding the clutch control as required (Octavia II, Superb II and Yeti) ⇒ “1.24 Bleeding the clutch control”, page 61 .

– Then depress the clutch pedal carefully, at the same time hold the pedal in five different positions for approx. 20s over the entire distance the pedal has to travel and check that the pedal does not fall through on its own while being held (in five positions). While doing so, a second mechanic must check if fluid is leaking from the other components of the hydraulic clutch control ⇒ page 49 .

## 1.21 Removing and installing slave cylinder, Octavia II

**Special tools and workshop equipment required**

- Hose clamps - MP7-602 (3094)-
- Closing tool - T10249/1-
- Grease for splines - G 000 100-

**Note**

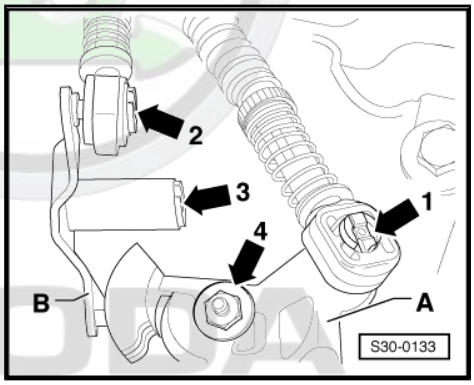
- *If the slave cylinder must be replaced due to the predetermined fault, first of all check the hydraulic clutch control* ⇒ *"1.20 Check hydraulic clutch control", page 49* .
- *If the slave cylinder with the connected tube-hose line is removed from the gearbox, do no longer depress the clutch pedal. Otherwise, the piston can be pressed out of the slave cylinder and thus be destroyed.*
- *When performing the following work, make sure no brake fluid comes into contact with the gearbox. If this is the case. these points must be cleaned thoroughly.*

### 1.21.1 Removing

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Disconnect the battery-earth strap with the ignition off ⇒ Electrical System; Rep. gr. 27 .
– Remove air filter ⇒ Engine; Rep. gr. 23 .
– Remove battery and battery tray ⇒ Electrical System; Rep. gr. 27 .
– Remove lock washer -arrow 1- for shift cable from gearbox shift lever -A-.




**Vehicles up to 05.07 (metal relay lever)**

– Remove circlip -arrow 2- for selector cable from relay lever -B-.
– Remove selector cable and shift cable from the studs.
– Detach circlip -arrow 3- from the relay lever -B- and remove relay lever.

**Vehicles from 06.07 (plastic relay lever)**

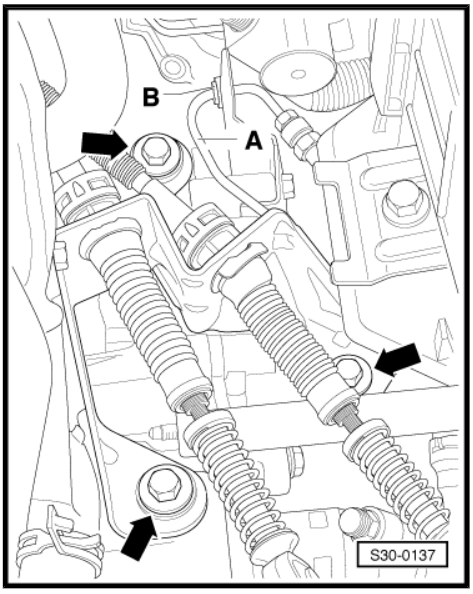
– Pull gear selector cable off pin.
– Remove relay lever together with cable lock ⇒ *"1.16 Plastic relay lever", page 106* .

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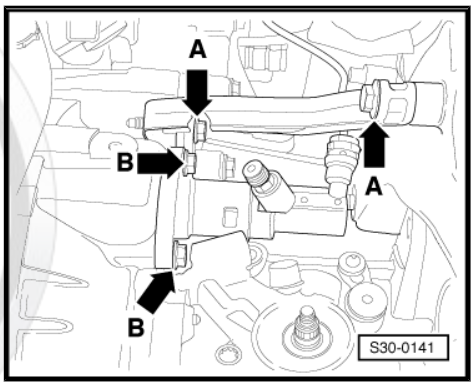
**Continued for all vehicles**

– Remove the gearshift lever -A-, for this step unscrew nut -arrow 4-.

– Disconnect the Bowden cable support from gearbox -arrows-.
– Tie up shift cable and selector cable.
– Remove bracket -B- from the gearbox and pull off from the tube-hose line -A-.




– Remove gearbox support -arrows A- (if applicable).
– Removing the slave cylinder -arrows B-.
– Lay a lint-free cloth under slave cylinder.




**Note**

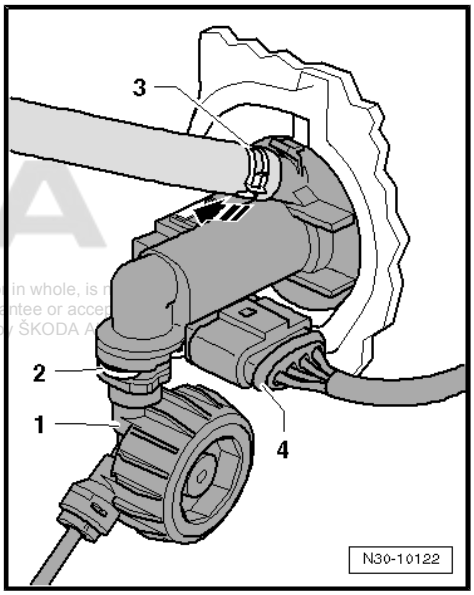
*When performing the following work. make sure that no brake fluid comes into contact with the frame side rail or the gearbox. If this is the case. these points must be cleaned thoroughly.*

– Clamp off supply hose to master cylinder using hose clamp - MP7-602- -A-.

If the plastic return hose with hose clamp - MP7-602- is disconnected, it will be permanently deformed.

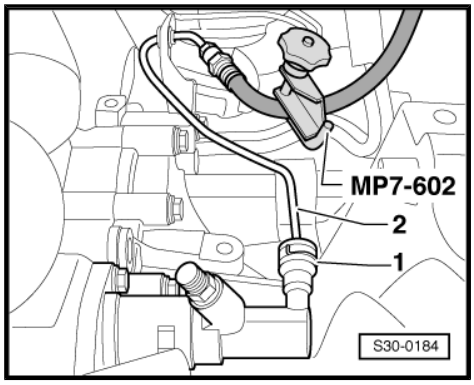
The plastic return hose however is not defective.

After the hose clamp - MP7-602- is removed, the plastic return hose must be returned to its original form.




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– If a tube-hose line is fitted (rubber line), pinch off the hose for the tube-hose line -A- to the master cylinder with the hose clamp - MP7-602- .
– Pull out locking clip -1- up to the stop and thus pull the tube-hose line -2- out of the slave cylinder (close plastic tube-hose line in a suitable manner).



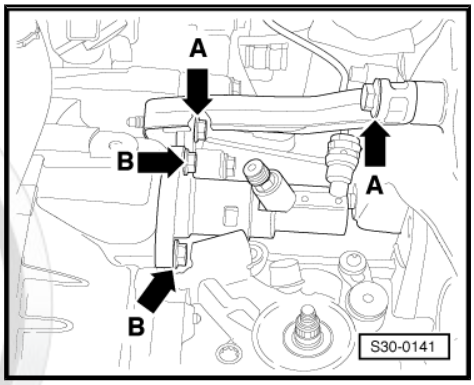

**Note**

*Do not depress the clutch pedal.*

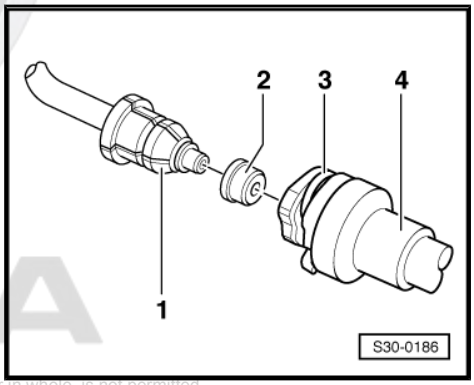
## 1.21.2 Installing

Installation is performed in the reverse order, pay attention to the following points:

– Grease tappet head of slave cylinder with grease - G 000 100- .
– Install slave cylinder and tighten screws -arrows B- to the given tightening torque.

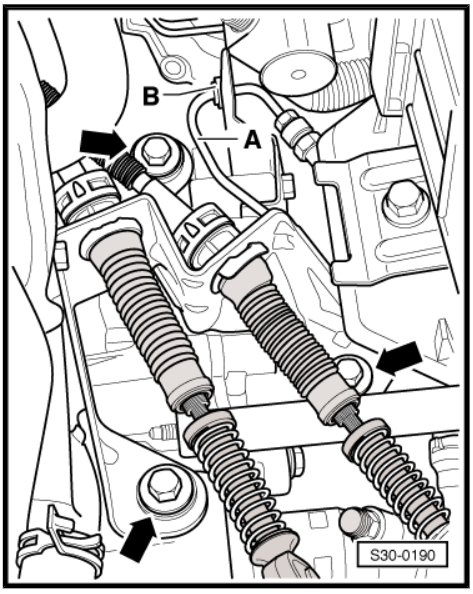



– Push the tube-hose line -1- with new gasket ring -2- into the slave cylinder -4- up to the stop.
– Press in the retaining clip of the tube-hose line up to the stop.
– For testing pull on the tube-hose line.

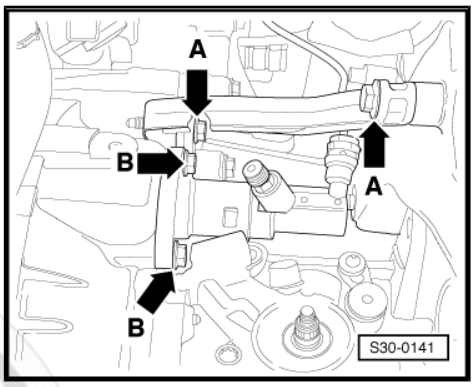



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– Install bracket -B- at the gearbox and insert the tube-hose line -A-.
– Remove hose clamp - MP7-602- .
– After the hose clamp - MP7-602 - is removed, the plastic return hose must be returned to its original form.




– Attach gearbox support to gearbox -arrows A- and tighten.
– After installing the slave cylinder bleed the clutch control ⇒ “1.24 Bleeding the clutch control”, page 61 .




Assemble gearshift mechanism up to 10.06
⇒ “1.14 Summary of components - Control cables up to 10.06”, page 101 .

Assemble gearshift mechanism as of 11.06
⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103 .

Setting the shift mechanism
⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123 .

– Install the battery tray and battery ⇒ Electrical System; Rep. gr. 27 .
– Install air filter ⇒ Engine; Rep. gr. 23 .

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Connect earth strap of battery ⇒ Electrical System; Rep. gr. 27 .

### Tightening torque

| | |
|---|---|
| Slave cylinder to gearbox | ⇒ “1.19 Summary of components - Hydraulics, Octavia II, Superb II, Yeti”, page 45 |
| bracket for tube-hose line | ⇒ “1.19 Summary of components - Hydraulics, Octavia II, Superb II, Yeti”, page 45 |
| Support to gearbox mounting bracket and gearbox | ⇒ “2.2.1 Tightening torques”, page 136 |
| Gearshift lever to gearshift shaft, up to 10.06 | ⇒ “1.14 Summary of components - Control cables up to 10.06”, page 101 |
| Gearshift lever to gearshift shaft, from 11.06 | ⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103 |
| Cable support to gearbox, up to 10.06 | ⇒ “1.14 Summary of components - Control cables up to 10.06”, page 101 |

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| | |
|---|---|
| Cable support to gearbox, from 11.06 | ⇒ "1.15 Summary of components - Control cables as of 11.06", page 103 |

## 1.22 Removing and installing slave cylinder, Superb II

**Special tools and workshop equipment required**

- Grease for splines - G 000 100-

**Note**

- *If the slave cylinder must be replaced, first of all check the hydraulic clutch control* ⇒ *"1.20 Check hydraulic clutch control", page 49* .
- *If the slave cylinder with the connected tube-hose line is removed from the gearbox, do no longer depress the clutch pedal. Otherwise, the piston can be pressed out of the slave cylinder and thus be destroyed.*
- *When performing the following work, make sure no brake fluid comes into contact with the gearbox. If this is the case. these points must be cleaned thoroughly.*

### 1.22.1 Removing

**Note**

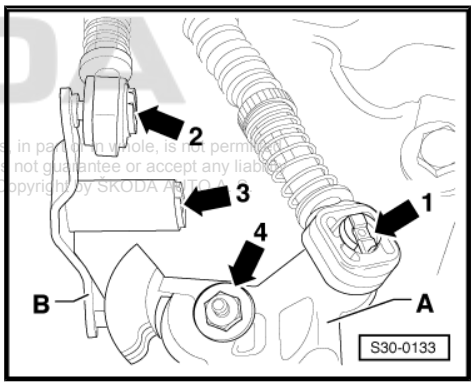
*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Disconnect the battery-earth strap with the ignition off ⇒ Electrical System; Rep. gr. 27 .
– Remove air filter ⇒ Engine; Rep. gr. 23 .
– Remove battery and battery tray ⇒ Electrical System; Rep. gr. 27 .
– Remove circlip -arrow 1- for shift cable from gearbox shift lever -A-.

**Metal relay lever**

– Remove circlip -arrow 2- for selector cable from relay lever -B-.
– Remove selector cable and shift cable from the studs.
– Detach circlip -arrow 3- from the relay lever -B- and remove relay lever.

**Plastic relay lever**




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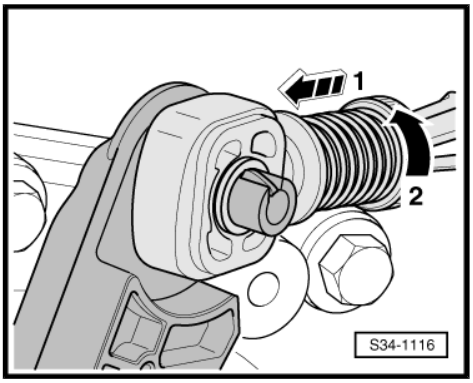
### Separate cable lock from selector cable

- In order to avoid damage to the selector cable. the cable lock must be separated from the selector cable before removal.

– Pull forward the locking mechanism as far as the stop in -direction of arrow 1-, then lock by turning to the left in -direction of arrow 2-.

– Remove the plastic relay lever together with the cable lock.

– Remove the plastic relay lever together with the cable lock ⇒ “1.16 Plastic relay lever”, page 106 .



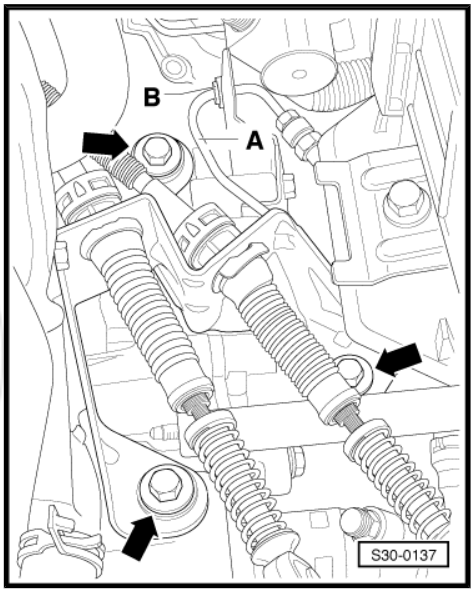

### Continued for all vehicles

– Remove the gearshift lever from the gearshift shaft.

– Disconnect the Bowden cable support from gearbox -arrows-.

– Tie up shift cable and selector cable.

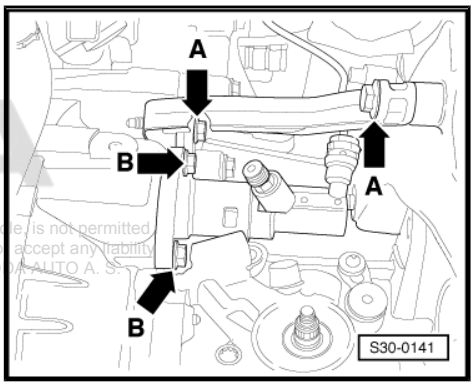
– Remove bracket -B- from the gearbox and pull off from the tube-hose line -A-.




– Remove gearbox support -arrows A- (if applicable).

– Removing the slave cylinder -arrows B-.

– Lay a lint-free cloth under slave cylinder.




**Note**

*When performing the following work. make sure that no brake fluid comes into contact with the frame side rail or the gearbox. If this is the case. these points must be cleaned thoroughly.*

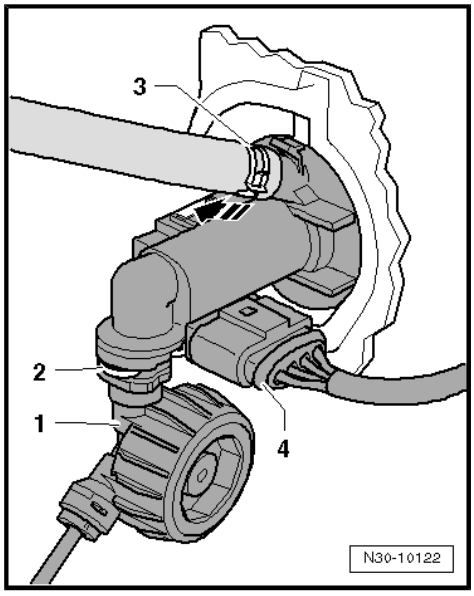
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– Clamp off supply hose to master cylinder using hose clamp - MP7-602- -A-.

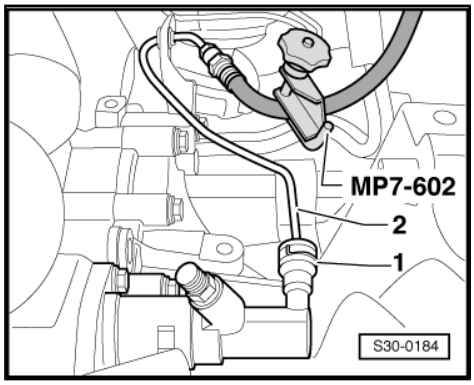
If the plastic return hose with hose clamp - MP7-602- is disconnected, it will be permanently deformed.

The plastic return hose however is not defective.

After the hose clamp - MP7-602- is removed, the plastic return hose must be returned to its original form.




– If a tube-hose line is fitted (rubber line), pinch off the hose for the tube-hose line -A- to the master cylinder with the hose clamp - MP7-602- .
– Pull out locking clip -1- up to the stop and thus pull the tube-hose line -2- out of the slave cylinder (close plastic tube-hose line in a suitable manner).




**Note**

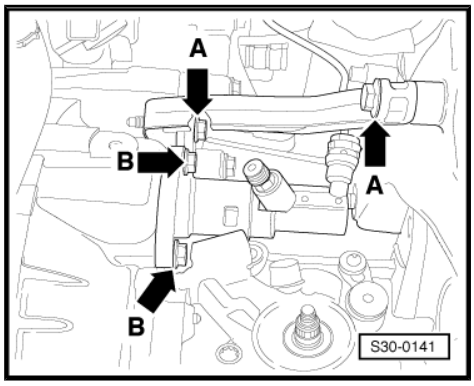
*Do not depress the clutch pedal.*

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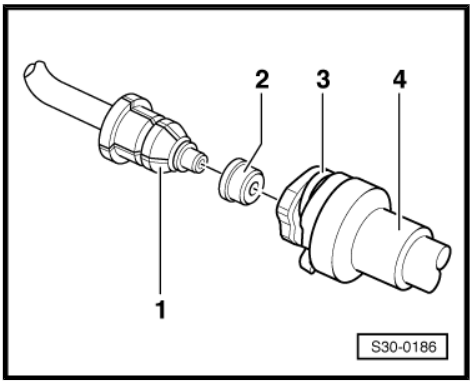
## 1.22.2 Installing

Installation is performed in the reverse order, pay attention to the following points:

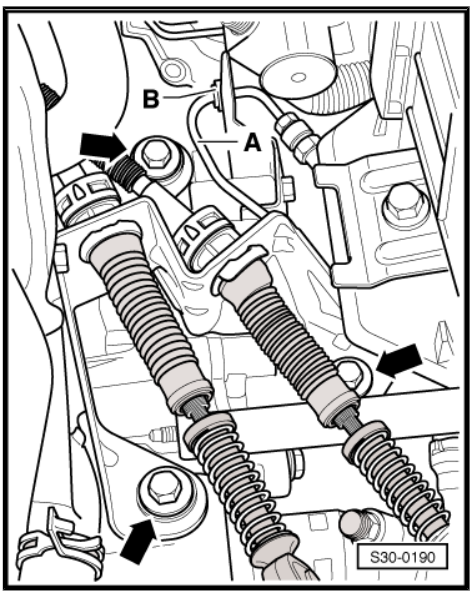
– Grease tappet head of slave cylinder with grease - G 000 100- .
– Install slave cylinder and tighten screws -arrows B- to the given tightening torque.



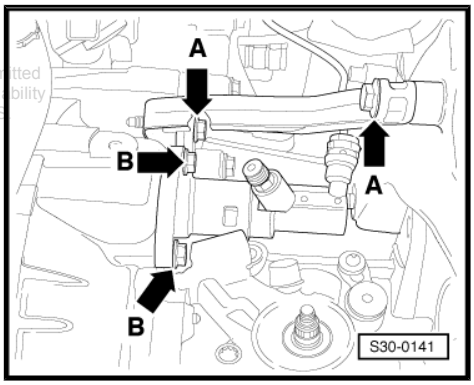
– Push the tube-hose line -1- with new gasket ring -2- into the slave cylinder -4- up to the stop.
– Press in the retaining clip of the tube-hose line up to the stop.
– For testing pull on the tube-hose line.




– Install bracket -B- at the gearbox and insert the tube-hose line -A-.
– Remove hose clamp - MP7-602- .
– After the hose clamp - MP7-602 - is removed, the plastic return hose must be returned to its original form.




– Attach gearbox support to gearbox -arrows A- and tighten.
– After installing the slave cylinder bleed the clutch control ⇒ “1.24 Bleeding the clutch control”, page 61 .




Assembling gearshift mechanism
⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103 .

Setting the shift mechanism
⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123 .

– Install air filter ⇒ Engine; Rep. gr. 23 .

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Connect earth strap of battery ⇒ Electrical System; Rep. gr. 27 .

### Tightening torques

| | |
|---|---|
| Slave cylinder to gearbox | ⇒ “1.19 Summary of components - Hydraulics, Octavia II, Superb II, Yeti”, page 45 |
| bracket for tube-hose line | ⇒ “1.19 Summary of components - Hydraulics, Octavia II, Superb II, Yeti”, page 45 |

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| | |
|---|---|
| Support to gearbox mounting bracket and gearbox | ⇒ “2.2.1 Tightening torques”, page 136 |
| Gearbox shift lever to gearshift shaft | ⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103 |
| Cable support to gearbox | ⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103 |

## 1.23 Removing and installing slave cylinder, Yeti

**Special tools and workshop equipment required**

- Hose clamp - MP7-602 (3094)-
- Grease for splines - G 000 100-
- Closing tool - T10249/1-

**Note**

- *If the slave cylinder must be replaced due to a predetermined fault, first of all check the hydraulic clutch control ⇒ “1.20 Check hydraulic clutch control”, page 49 .*
- *If the slave cylinder with the connected tube-hose line is removed from the gearbox, do no longer depress the clutch pedal. Otherwise, the piston can be pressed out of the slave cylinder and thus be destroyed.*
- *When performing the following work, make sure no brake fluid comes into contact with the gearbox. If this is the case. these points must be cleaned thoroughly.*

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### 1.23.1 Removing

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

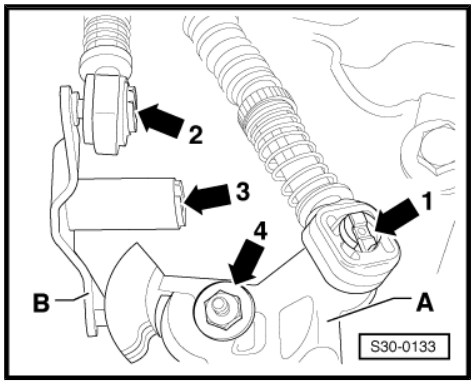
– Disconnect the battery-earth strap with the ignition off ⇒ Electrical System; Rep. gr. 27 .
– Remove air filter ⇒ Engine; Rep. gr. 23 .
– Remove battery and battery tray ⇒ Electrical System; Rep. gr. 27 .
– Remove lock washer -arrow 1- for shift cable from gearbox shift lever -A-.

**Plastic relay lever**

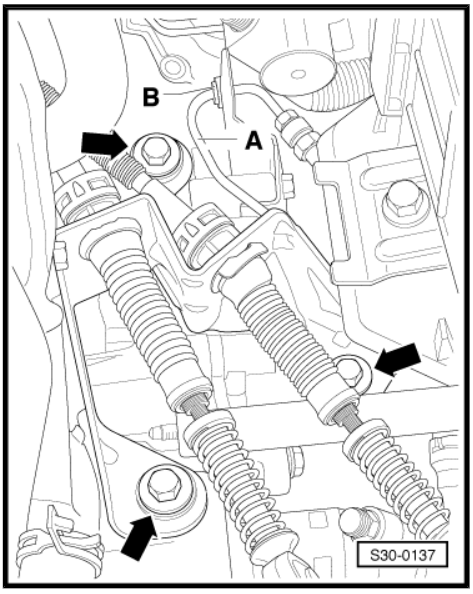
– Pull off the shift cable from the stud.
– Remove relay lever together with cable lock ⇒ “1.16 Plastic relay lever”, page 106 .

**Continued for all vehicles**

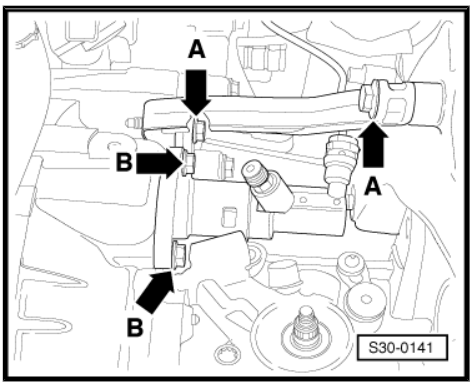
– Remove the gearshift lever -A-, for this step unscrew nut -arrow 4-.



– Disconnect the Bowden cable support from gearbox -arrows-.
– Tie up shift cable and selector cable.
– Remove bracket -B- from the gearbox and pull off from the tube-hose line -A-.




– Remove gearbox support -arrows A- (if applicable).
– Removing the slave cylinder -arrows B-.
– Lay a lint-free cloth under slave cylinder.




**Note**

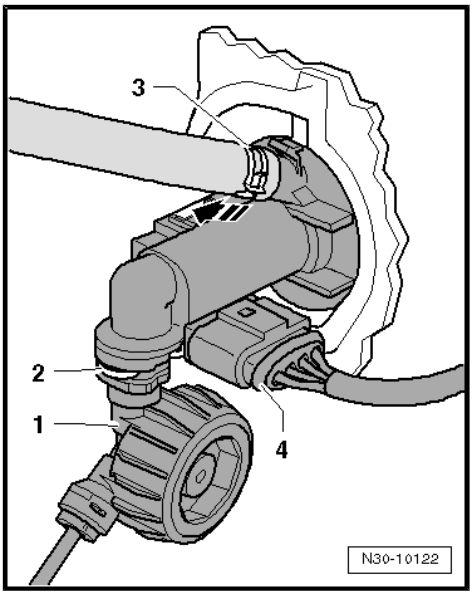
*Make sure no brake fluid comes into contact with the gearbox. If this is the case, this point must be cleaned thoroughly.*

– Clamp off supply hose to master cylinder using hose clamp - MP7-602- -A-.

If the plastic return hose with hose clamp - MP7-602- is disconnected, it will be permanently deformed.

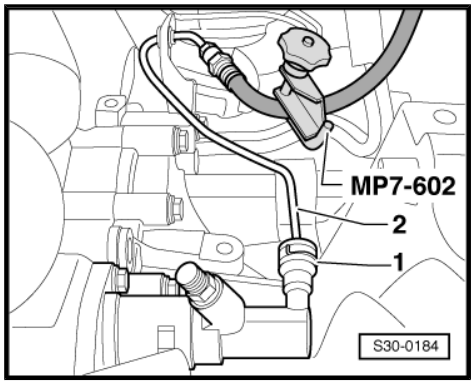
The plastic return hose however is not defective.

After the hose clamp - MP7-602- is removed, the plastic return hose must be returned to its original form.




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– If a tube-hose line is fitted (rubber line), pinch off the hose for the tube-hose line -A- to the master cylinder with the hose clamp - MP7-602- .
– Pull out locking clip -1- up to the stop and thus pull the tube-hose line -2- out of the slave cylinder (close plastic tube-hose line in a suitable manner).



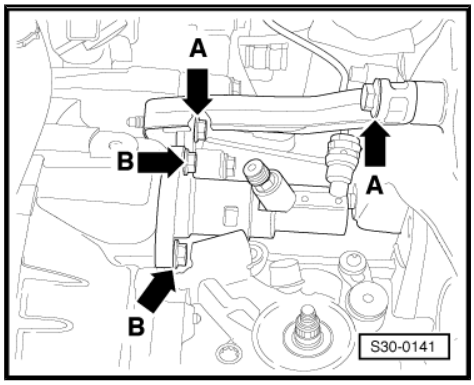

**Note**

*Do not depress the clutch pedal.*

## 1.23.2 Installing

Installation is performed in the reverse order, pay attention to the following points:

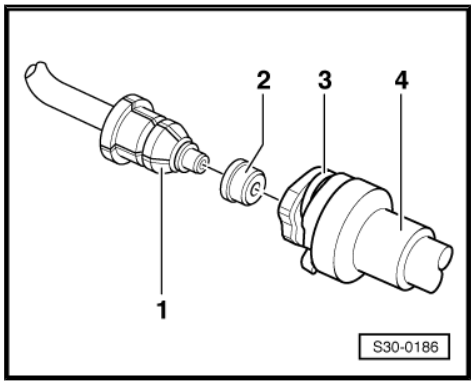
– Grease tappet head with grease - G 000 100- .
– Install slave cylinder and tighten screws -arrows B- to the given tightening torque.




**Note**

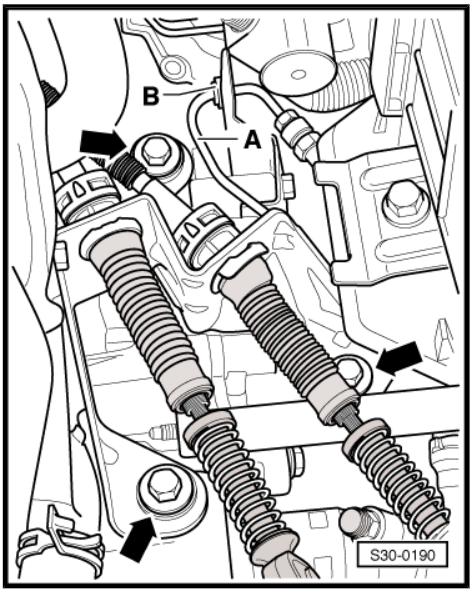
- *Replace sealing rings.*
- *Assign all the components via the ⇒ Electronic Catalogue of Original Parts .*

– Push the tube-hose line -1- with new gasket ring -2- into the slave cylinder -4- up to the stop.
– Press in the retaining clip of the tube-hose line up to the stop.
– For testing pull on the tube-hose line.

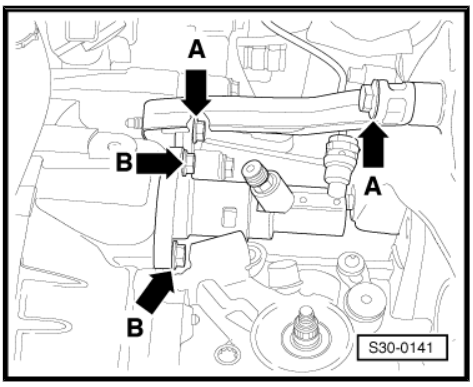



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– Install bracket -B- at the gearbox and insert the tube-hose line -A-.
– Remove hose clamp - MP7-602- .
– After the hose clamp - MP7-602 - is removed, the plastic return hose must be returned to its original form.




– Attach gearbox support to gearbox -arrows A- and tighten.
– After installing the slave cylinder bleed the clutch control ⇒ “1.24 Bleeding the clutch control”, page 61 .




Assembling gearshift mechanism
⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103 .

Setting the shift mechanism
⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123 .

– Install the battery tray and battery ⇒ Electrical System; Rep. gr. 27 .
– Install air filter ⇒ Engine; Rep. gr. 23 .

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Connect earth strap of battery ⇒ Electrical System; Rep. gr. 27 .

**Tightening torques**

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| | |
|---|---|
| Slave cylinder to gearbox | ⇒ “1.19 Summary of components - Hydraulics, Octavia II, Superb II, Yeti”, page 45 |
| bracket for tube-hose line | ⇒ “1.19 Summary of components - Hydraulics, Octavia II, Superb II, Yeti”, page 45 |
| Support to gearbox mounting bracket and gearbox | ⇒ “2.2.1 Tightening torques”, page 136 |
| Gearbox shift lever to gearshift shaft | ⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103 |
| Cable support to gearbox | ⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103 |

## 1.24 Bleeding the clutch control

**Special tools and workshop equipment required**

- Brake filling and bleeding device e.g. - VAS 5234-

**Note**

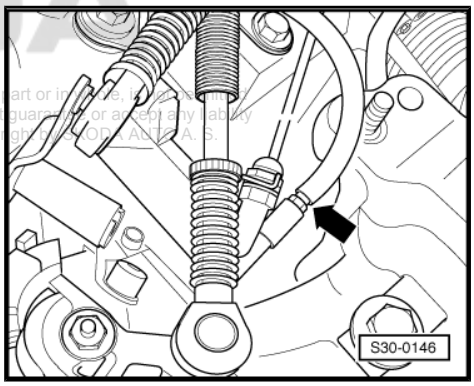
- *When performing the following work. make sure that no brake fluid comes into contact with the frame side rail or the gearbox.*
- *Pre-filling of the system is not necessary!*
- *Specification of brake fluid ⇒ Electronic catalogue of original parts .*

– Remove air filter ⇒ Engine; Rep. gr. 23 .
– Connect the brake filling and bleeding device .

To bleed use bleeder hose .

– Connect the ventilation hose with the drip bottle of the brake bleeding device.
– Fit the bleeder hose onto the vent valve -arrow-.
– Activate system with a pressure of 0.2 MPa.
– Open vent valve.

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**Note**

*On certain vehicles the vent valve can be opened by hand. To do so. turn the vent valve 180° to the left as far as the stop.*

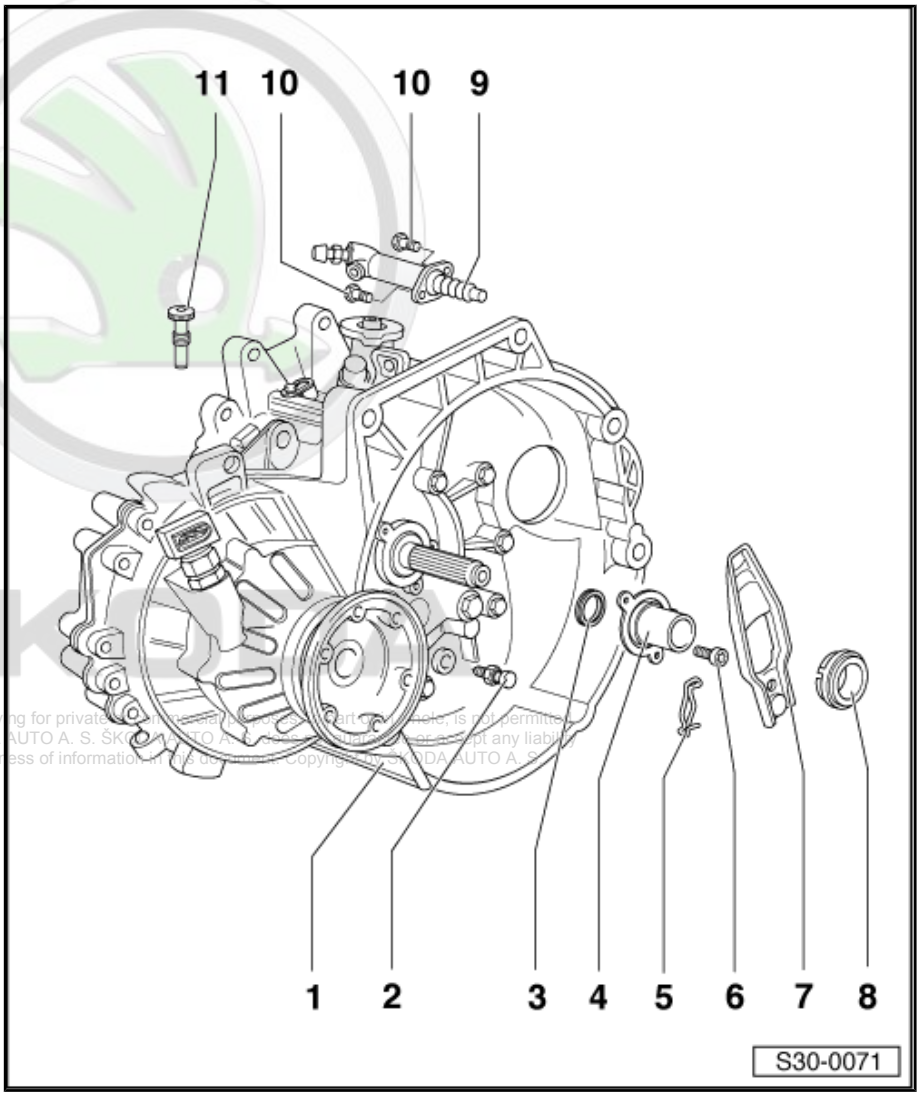
– Allow approx. 100 $cm^3$ of brake fluid to flow out.
– Close vent valve.
– Activate foot controls forcefully from stop to stop between 10 and 15 times.
– Activate system with a pressure of 0.2 MPa.
– Open vent valve.
– Allow approx. 50 $cm^3$ more brake fluid to flow out.
– Close vent valve.
– After completing the bleeding procedure activate the clutch pedal repeatedly.
– If necessary, bleed the clutch control once again ⇒ “1.24 Bleeding the clutch control”, page 61 .
– Install air filter ⇒ Engine; Rep. gr. 23 .

# 2 Repairing the clutch release mechanism

⇒ "2.1 Assembly overview - clutch release mechanism", page 63

⇒ "2.2 Remove and install the clutch release lever together with the release bearing and guide bushing", page 64

## 2.1 Assembly overview - clutch release mechanism




**1 - Gearbox**

**2 - Ball stud**

- ❑ Original grease must be removed from the contact surface of the clutch release lever
- ❑ grease with grease - G 000 100-
- ❑ 25 Nm

**3 - Input shaft seal**

- ❑ Removing and installing ⇒ "5 Repairing gearbox housing and clutch housing", page 182
- ❑ replace ⇒ Electronic Catalogue of Original Parts

**4 - Guide bushing with O-ring**

- ❑ O-ring is fitted to guide bushing
- ❑ if O-ring is damaged, replace O-ring and bushing together ⇒ Electronic Catalogue of Original Parts
- ❑ remove and install ⇒ page 64 together with the clutch release lever and clutch release bearing
- ❑ Grease guide bushing in the area of the release lever with grease - G 000 100-

**5 - Retaining spring**

- ❑ attach to clutch release lever

**6 - Cylinder head bolt**

- ❑ 20 Nm

**7 - Clutch release lever**

- ❑ remove and install ⇒ page 64 together with clutch release bearing
- ❑ Original grease must be removed from the contact surface of the clutch release lever
- ❑ Grease contact surface on the ball stud with grease - G 000 100-

**8 - Release bearing**

- ❑ Do not wash out bearing; wipe only
- ❑ replace noisy bearings ⇒ Electronic Catalogue of Original Parts

- ❑ Removing and installing ⇒ page 64
- ❑ Grease contact surfaces on the clutch release lever with grease - G 000 100-

**9 - Slave cylinder**

- ❑ removing and installing (Octavia II) ⇒ “1.21 Removing and installing slave cylinder, Octavia II”, page 50
- ❑ removing and installing (Superb II) ⇒ “1.22 Removing and installing slave cylinder, Superb II”, page 54
- ❑ removing and installing (Yeti) ⇒ “1.23 Removing and installing slave cylinder, Yeti”, page 58
- ❑ Grease tappet head with grease - G 000 100-

**10 - Flange bolt**

- ❑ 20 Nm

**11 - Mounting bolt**

- ❑ secures the clutch release lever when installing the gearbox (Octavia II) ⇒ “2.2 Install gearbox (Octavia II)”, page 134
- ❑ secures the clutch release lever when installing the gearbox (Superb II) ⇒ “2.4 Install gearbox (Superb II)”, page 143
- ❑ secures the clutch release lever when installing the gearbox (Yeti) ⇒ “2.6 Installing gearbox (Yeti)”, page 151
- ❑ unscrew after the gearbox has been installed (Octavia II) ⇒ “2.2 Install gearbox (Octavia II)”, page 134
- ❑ unscrew after the gearbox has been installed (Superb II) ⇒ “2.4 Install gearbox (Superb II)”, page 143
- ❑ unscrew after the gearbox has been installed (Yeti) ⇒ “2.6 Installing gearbox (Yeti)”, page 151

**Note**

*If a mounting bolt Pos. 11 is not provided, use bolt M8 x 35.*

## 2.2 Remove and install the clutch release lever together with the release bearing and guide bushing

**Special tools and workshop equipment required**

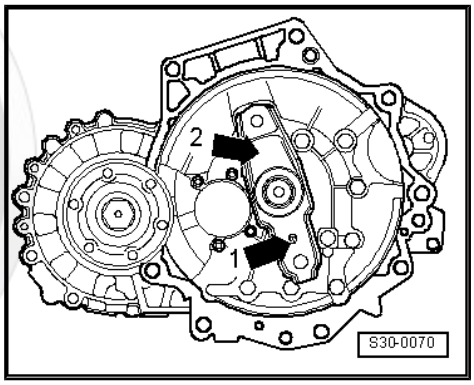
- ♦ Grease for splines - G 000 100-

**Remove and install the clutch release lever together with the release bearing and guide bushing**

– Unhook spring -arrow 1- upwards.

– Remove clutch release lever -arrow 2- and clutch release bearing.

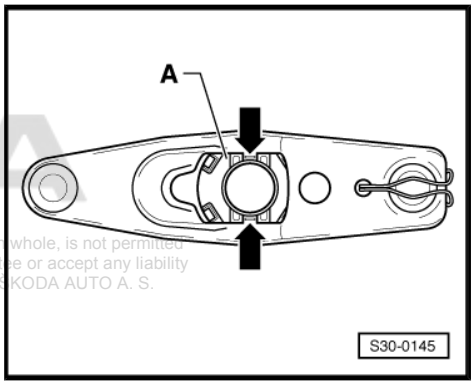
– Installation is carried out in the reverse order.




**Removing and installing release bearing**

– Push together the catch pegs -arrows- on the back of the clutch release lever and remove the release bearing -A- from the clutch release lever.

– To install, press the release bearing -A- into the clutch release lever until the catch pegs -arrows- lock into position.




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# 3 Repairing clutch

⇒ “3.1 Summary of components - Repairing the clutch make Sachs ”, page 65

⇒ “3.2 Removing and installing clutch make Sachs ”, page 66

⇒ “3.3 Summary of components - Repairing the clutch make LuK ”, page 70

⇒ “3.4 Removing and installing clutch make Luk ”, page 71

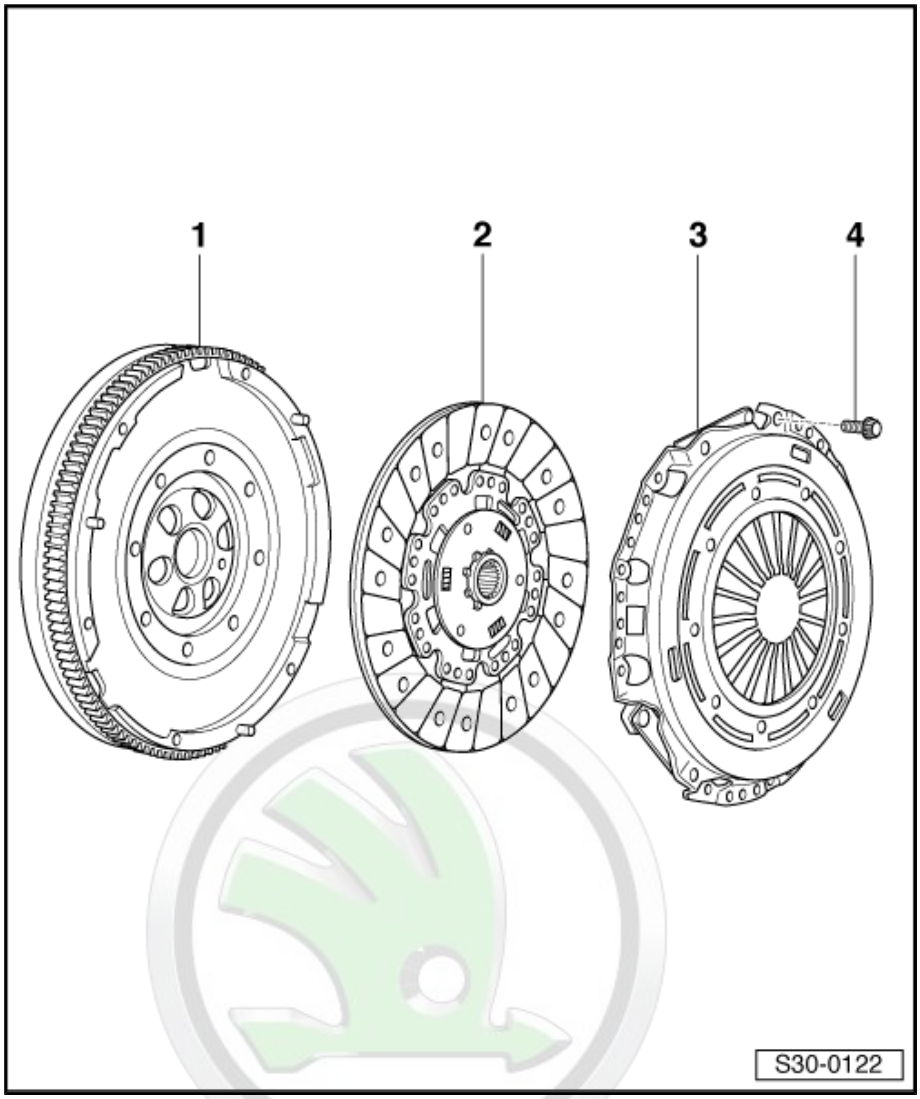
⇒ “3.5 Fault finding power transmission - problems with the clutch and clutch control”, page 75

## 3.1 Summary of components - Repairing the clutch make “Sachs”

**Note**

- *Observe the fault finding of the power transmission before replacing the clutch disc and the pressure plate - problems with the clutch and clutch control ⇒ “3.5 Fault finding power transmission - problems with the clutch and clutch control”, page 75 .*
- *Replace the clutch discs and pressure plates if the riveting is damaged or loose.*
- *Assign the clutch disc and pressure plate in accordance with the engine identification characters via the ⇒ Electronic catalogue of original parts .*
- *The two-mass flywheel. pressure plate and clutch disc are assigned to each other and must not be installed together with components from other manufacturers.*

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**1 - Dual-mass flywheel**

- ❑ make sure the centering pins are correctly fitted
- ❑ The contact surface for the clutch lining must be free of grooves, oil and grease
- ❑ Observe removal instructions for two-mass flywheel ⇒ Engine; Rep. gr. 13
- ❑ Removing and Installing ⇒ Engine; Rep. gr. 13

**2 - Clutch disc**

- ❑ Assignment ⇒ Electronic Catalogue of Original Parts
- ❑ Removing and installing ⇒ “3.2 Removing and installing clutch make Sachs ”, page 66
- ❑ must only be replaced together with pressure plate
- ❑ Fitting position ⇒ page 68

**3 - Thrust washer**

- ❑ Assignment ⇒ Electronic Catalogue of Original Parts
- ❑ with resetting mechanism
- ❑ Distinguishing feature ⇒ page 68
- ❑ Removing and installing ⇒ “3.2 Removing and installing clutch make Sachs ”, page 66
- ❑ Check the extremities of the membrane springs ⇒ page 68
- ❑ Check feather joints and riveted joints ⇒ page 68
- ❑ must be replaced together with clutch disc

**4 - Screw**

- ❑ Assignment ⇒ Electronic Catalogue of Original Parts
- ❑ Uniformly loosen crosswise and tighten
- ❑ M6 - 13 Nm
- ❑ M7 - 20 Nm

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## 3.2 Removing and installing clutch make “Sachs”

**Special tools and workshop equipment required**

- ♦ Counterholder - MP1-223 (3067)-
- ♦ Centering mandrel - MP3-475A (3190A)-
- ♦ Grease for splines - G 000 100-

## 3.2.1 Removing

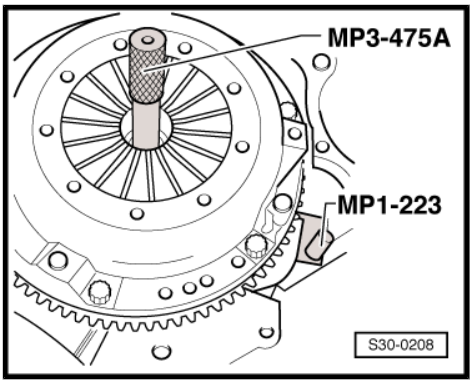
– Remove gearbox (Octavia II)
⇒ “2.1 Removing gearbox (Octavia II)”, page 127

– Remove gearbox (Superb II)
⇒ “2.3 Remove gearbox (Superb II)”, page 136 .

– Remove gearbox (Yeti)
⇒ “2.5 Removing gearbox (Yeti)”, page 145 .

**In order to avoid a deformation of the pressure plate when removing it (this leads to jerking during start-up). the pressure plate must be loosened as follows:**

– Insert counterholder - MP1-223 (3067)- to slacken the bolts.

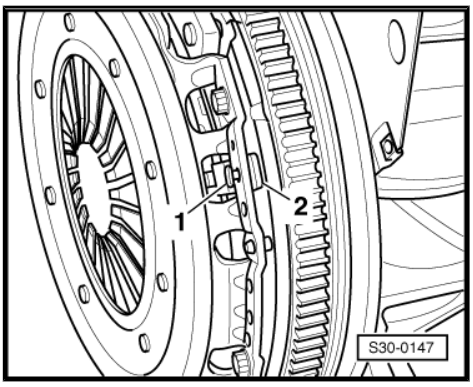



– Release bolts gradually and crosswise.

• When unscrewing. the stop must slacken -2- together with the bolt -1-.

– If the stop does not loosen, press the bolt in the direction of the flywheel.

– Remove pressure plate and clutch plate.



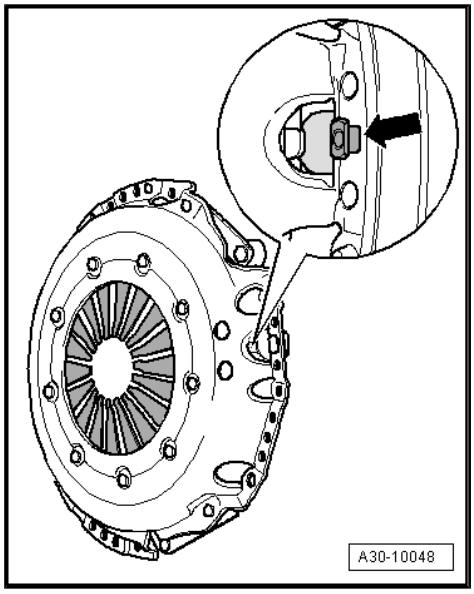

## 3.2.2 Installing

Installation is performed in the reverse order, pay attention to the following points:

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**Note**

- *Always replace pressure plate and clutch disc together.*
- *Assign the pressure plate and clutch disc in accordance with engine identification characters, see ⇒ Electronic Catalogue of Original Parts .*
- *The two-mass flywheel. pressure plate and clutch disc are assigned to each other and must not be installed together with components from other manufacturers.*

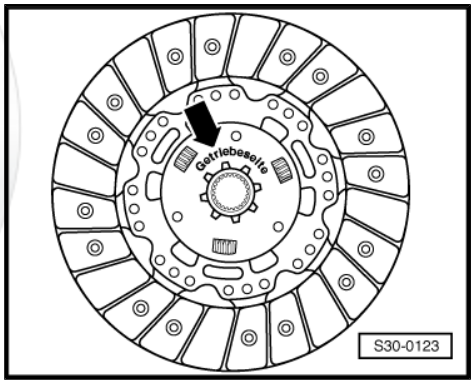



### Distinguishing feature self-adjusting clutch type “Sachs”

- Pressure plate with stop (position sensor) -arrow-.

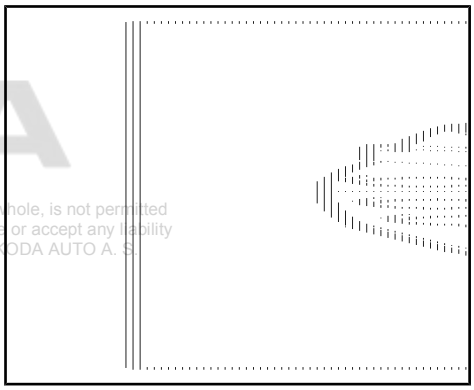
### Installation location of the clutch disc

- Legend “side of gearbox” points to the gearbox.




### Check the extremities of the membrane springs

- Wear is allowed up to half the membrane spring thickness -arrows-.

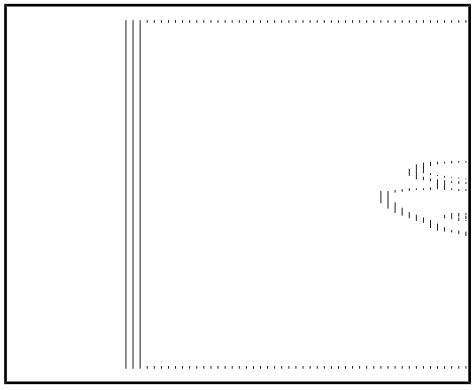


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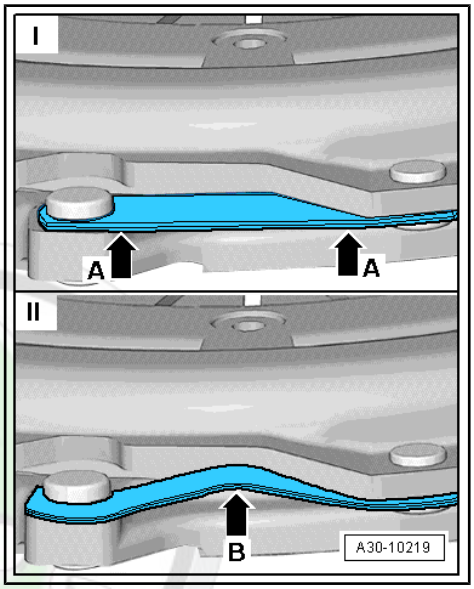
### Check feather joints and riveted joints

– Check the feather joints between pressure plate and cover for cracks as well as the riveted joints for firm seating.

- Pressure plate with damaged feather joints or with loose riveted joints -arrows- must be replaced.



### Check springs and riveted joints




I - Tension springs o.k.

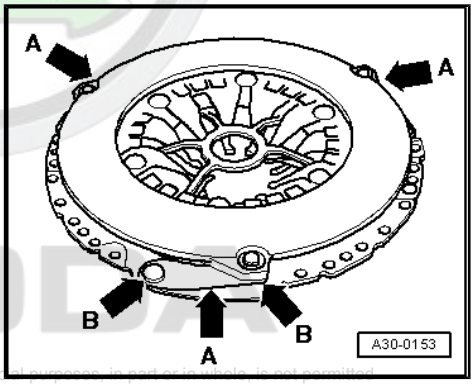
- slight bends in the external area -arrow A- are part of the standard condition

II - Tension springs damaged

- Clutch plates with strongly bent or broken feather joints -arrow B- must be replaced.

– Check springs -arrows A- for damage and riveted joints -arrows B- for firm seating.

- Clutch plates with strongly bent or broken feather joints or loose riveted connections must be replaced.



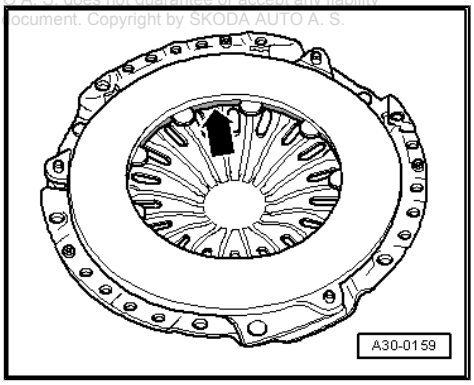

– Check whether the riveted joints -arrows B- are fixed on all springs -arrows A-.

– Bring all screws to the end position, clockwise in sequence.

- Replace the clutch plates with loose riveted joints -arrow B-.

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### Check metal plate ring



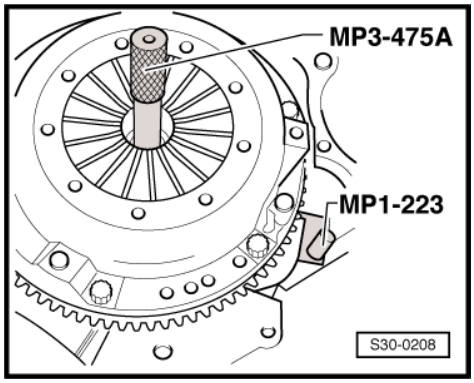

– Check metal plate ring in the clutch plate -arrow- for damage.

- Replace the clutch plates with the broken metal plate ring.

**Note**

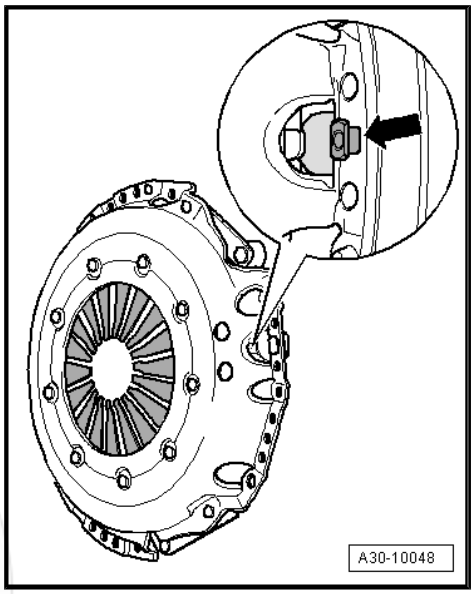
- *Replace the clutch discs and pressure plates if the riveting is damaged or loose.*
- *In order to reduce unpleasant odours if the clutch is burnt. thoroughly clean the clutch housing as well as the flywheel and the engine on the side of the gearbox.*
- *Clean the drive shaft serration and hub serration on used clutch discs, remove corrosion. Apply a very thin layer of grease - G 000 100- onto the serration. Then move clutch plate to and fro on input shaft until hub moves freely on shaft. Remove all excess grease.*
- *Pressure plates are protected against corrosion and greased. Only clean the thrust surface as otherwise the life of the clutch may be considerably reduced.*
- *The thrust surface of the pressure plate and the clutch disc lining must fully rest against the flywheel before the screws are inserted. Only then may the fixing screws be inserted.*

– When installing, re-use the counterholder - MP1-223 (3067)- for tightening the screws.
– Place the pressure plate onto the centering pins.
– Use centering mandrel - MP3-475A (3190A)- for centering the clutch disc.




**In order to avoid a deformation of the pressure plate when installing it (this leads to jerking during start-up). the pressure plate must be installed as follows:**

– Pay attention that the stop bolt (position sensor) -arrow- can move freely.
– Screw in all the screws by hand uniformly. until the bolt head rests against the pressure plate.
– Tighten the screws gradually and crosswise so as not to damage the centering holes on the pressure plate and the centering pins of the flywheel. while doing so the stop bolt -arrow- must not be lifted up from the pressure plate.
– Tighten all 6 screws gradually to tightening torque
⇒ “3.1 Summary of components - Repairing the clutch make Sachs ”, page 65 .
– Install gearbox (Octavia II)
⇒ “2.2 Install gearbox (Octavia II)”, page 134 .
– Install gearbox (Superb II)
⇒ “2.4 Install gearbox (Superb II)”, page 143 .
– Install gearbox (Yeti)
⇒ “2.6 Installing gearbox (Yeti)”, page 151 .

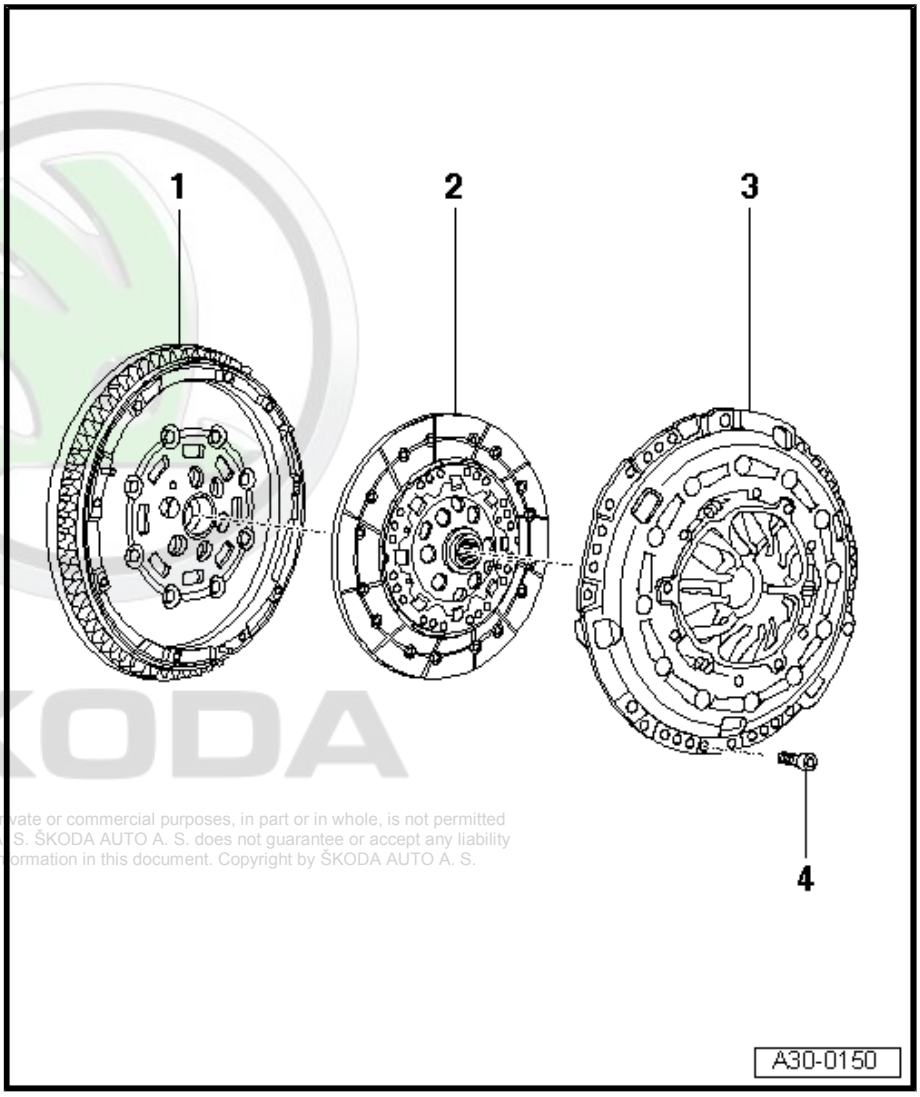



## 3.3 Summary of components - Repairing the clutch make “LuK”

**Note**

- *Observe the fault finding of the power transmission before replacing the clutch disc and the pressure plate - problems with the clutch and clutch control*
*⇒ “3.5 Fault finding power transmission - problems with the clutch and clutch control”, page 75 .*
- *Replace the clutch discs and pressure plates if the riveting is damaged or loose.*
- *Assign the clutch disc and pressure plate in accordance with the engine identification characters via the ⇒ Electronic catalogue of original parts .*
- *The two-mass flywheel. pressure plate and clutch disc are assigned to each other and must not be installed together with components from other manufacturers.*

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**1 - Dual-mass flywheel**

- ❑ make sure the centering pins are correctly fitted
- ❑ The contact surface for the clutch lining must be free of grooves, oil and grease
- ❑ Observe removal instructions for two-mass flywheel ⇒ Engine; Rep. gr. 13
- ❑ Removing and Installing ⇒ Engine; Rep. gr. 13

**2 - Clutch disc**

- ❑ Assignment ⇒ Electronic Catalogue of Original Parts
- ❑ Removing and installing ⇒ page 71
- ❑ must be only replaced together with “SAC” pressure plate Pos. 3
- ❑ Fitting position ⇒ page 72

**3 - “SAC”-Pressure plate**

- ❑ “SAC” is an abbreviation for Self-Adjusting-Clutch and means “self-adjusting clutch”
- ❑ Assignment ⇒ Electronic Catalogue of Original Parts
- ❑ Removing and installing ⇒ “3.4 Removing and installing clutch make Luk ”, page 71
- ❑ Check the extremities of the membrane springs ⇒ page 72
- ❑ Check feather joints and riveted joints ⇒ page 73
- ❑ Check position of adjustment mechanism on new pressure plates ⇒ page 73
- ❑ must only be replaced together with clutch disc pos. 2

**4 - Screw**

- ❑ release or tighten in small stages crosswise
- ❑ Assignment ⇒ Electronic Catalogue of Original Parts
- ❑ M6 - 13 Nm
- ❑ M7 - 20 Nm

## 3.4 Removing and installing clutch make “Luk”

**Special tools and workshop equipment required**

- ♦ Counterholder - MP1-223 (3067)-
- ♦ Centering mandrel - MP3-475A (3190A)-
- ♦ Grease - G 000 100-

## 3.4.1 Removing

– Remove gearbox (Octavia II)
⇒ “2.1 Removing gearbox (Octavia II)”, page 127

– Remove gearbox (Superb II)
⇒ “2.3 Remove gearbox (Superb II)”, page 136 .

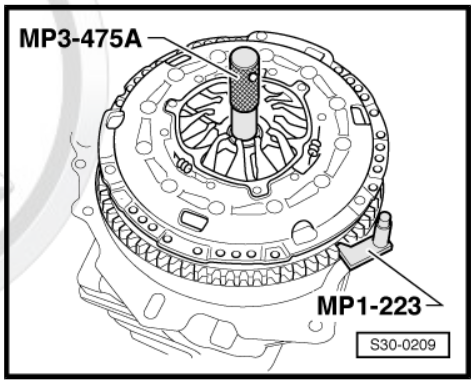
– Remove gearbox (Yeti)
⇒ “2.5 Removing gearbox (Yeti)”, page 145 .

**In order to avoid a deformation of the pressure plate when removing it (this leads to jerking during start-up). the pressure plate must be loosened as follows:**

– Insert counterholder - MP1-223 (3067)- to slacken the bolts.

– Release bolts gradually and crosswise.

– Remove pressure plate and clutch plate.




## 3.4.2 Installing

Installation is performed in the reverse order, pay attention to the following points:

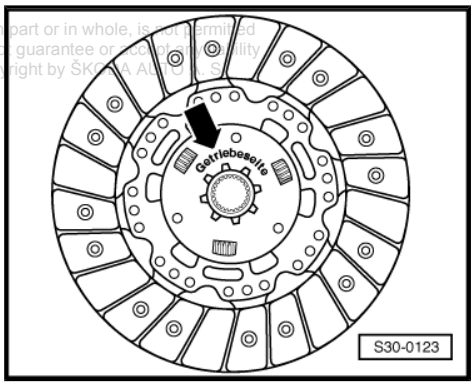
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**Note**

- *Always replace pressure plate and clutch disc together.*
- *Assign the pressure plate and clutch disc in accordance with engine identification characters, see ⇒ Electronic Catalogue of Original Parts .*

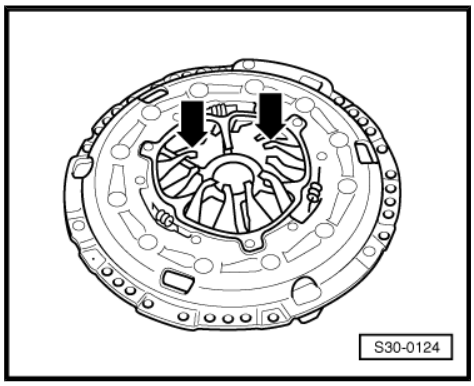
**Installation location of the clutch disc**

- Legend “side of gearbox” points to the gearbox.



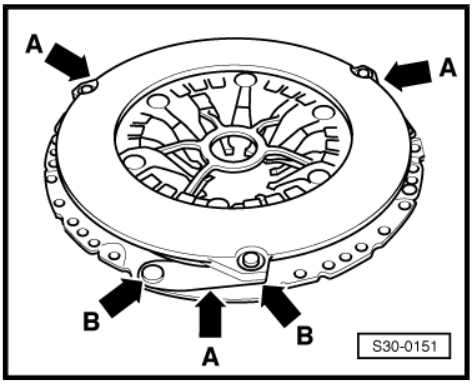

**Check the extremities of the membrane springs**

- Wear is allowed up to half the membrane spring thickness -arrows-.



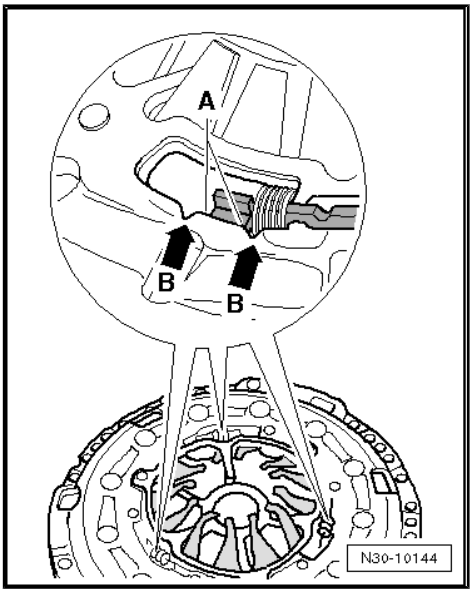
### Check feather joints and riveted joints

– Check feather joints -arrows A- for damage as well as riveted joints -arrows B- for firm seating.




### Check position of adjustment mechanism on new pressure plates

- Both edges -A- of the adjusting ring must be located between the pair of notches -B-.
- If the adjusting ring of the new pressure plate is located at a different position, the pressure plate with the clutch disc must not be installed.
- On used clutches the adjusting ring may also be located at a different position outside the notches.




### Check springs and riveted joints

I - Tension springs o.k.

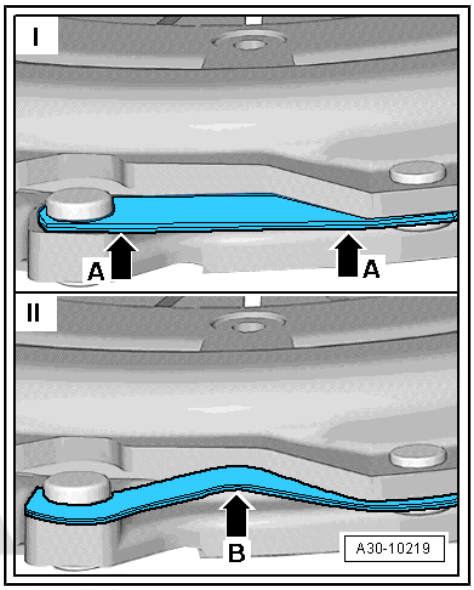
- slight bends in the external area -arrow A- are part of the standard condition

II - Tension springs damaged

- Clutch plates with strongly bent or broken feather joints -arrow B- must be replaced.

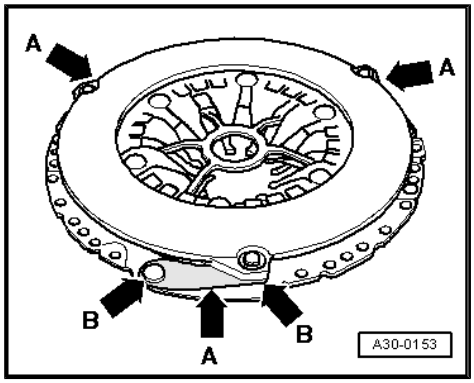
– Check springs -arrows A- for damage and riveted joints -arrows B- for firm seating.

- Clutch plates with strongly bent or broken feather joints or loose riveted connections must be replaced.



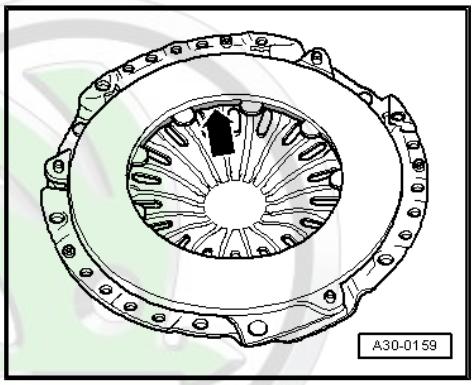

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– Check whether the riveted joints -arrows B- are fixed on all springs -arrows A-.
– Bring all screws to the end position, clockwise in sequence.
• Replace the clutch plates with loose riveted joints -arrow B-.




### Check metal plate ring

– Check metal plate ring in the clutch plate -arrow- for damage.
• Replace the clutch plates with the broken metal plate ring.




**Note**

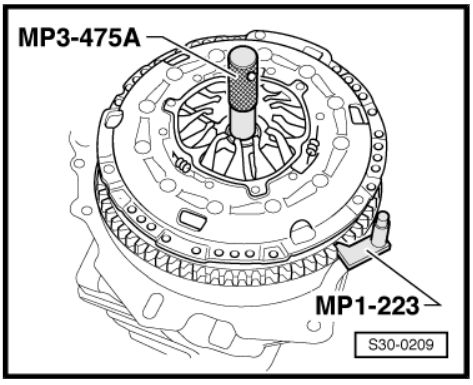
♦ *Replace the clutch discs and pressure plates if the riveting is damaged or loose.*
♦ *In order to reduce unpleasant odours if the clutch is burnt. thoroughly clean the clutch housing as well as the flywheel and the engine on the side of the gearbox.*
♦ *Clean the drive shaft serration and hub serration on used clutch discs, remove corrosion. Apply a very thin layer of grease - G 000 100- onto the serration. Then move clutch plate to and fro on input shaft until hub moves freely on shaft. Remove all excess grease.*
♦ *Pressure plates are protected against corrosion and greased. Only clean the thrust surface as otherwise the life of the clutch may be considerably reduced.*
♦ *The thrust surface of the pressure plate and the clutch disc lining must fully rest against the flywheel before the screws are inserted. Only then may the fixing screws be inserted.*

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– When installing, re-use the counterholder - MP1-223 (3067)- for tightening the screws.
– Place the pressure plate onto the centering pins.
– Use the centering mandrel - MP3-475A (3190A)- for centering the clutch disc.

**In order to avoid a deformation of the pressure plate when installing it (this leads to jerking during start-up). the pressure plate must be installed as follows:**

– Screw in all the screws by hand uniformly. until the bolt head rests against the pressure plate.
– Tighten the screws gradually and crosswise so as not to damage the centering holes of the pressure plate and the centering pins of the flywheel.
– Tighten all 6 screws gradually to specified tightening torque ⇒ “3.3 Summary of components - Repairing the clutch make LuK ”, page 70 .
– Install gearbox (Octavia II) ⇒ “2.2 Install gearbox (Octavia II)”, page 134 .
– Install gearbox (Superb II) ⇒ “2.4 Install gearbox (Superb II)”, page 143 .
– Install gearbox (Yeti) ⇒ “2.6 Installing gearbox (Yeti)”, page 151 .




## 3.5 Fault finding power transmission - problems with the clutch and clutch control

**Note**

*Check hydraulic clutch control*
*⇒ “1.20 Check hydraulic clutch control”, page 49* .

Always check the fault mentioned by the customer first before repairing the clutch. During this procedure, it must be determined if indeed there is a fault of the clutch or if the cause is only an incorrect setting of the shift mechanism.

| Fault | Fault type | Measure |
|---|---|---|
| Clutch pedal does not return to initial position. | ♦ Air in line system. | – Vent air from the line system; top up with brake fluid. |
| | ♦ Line system. master or slave cylinder leaking. | – Replace defective component, vent air from the line system; top up with brake fluid. |
| | ♦ Release bearing is tilted on the guide bushing, eroded. | – Replace guide bushing and release bearing. |
| | ♦ Membrane spring of the pressure plate broken. | – Replace pressure plate. |

| Fault | Fault description | Measure |
|---|---|---|
| Actuating force on the clutch pedal too high. | ♦ Retractor spring defect. | – Replace retractor spring. |

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| Fault | Fault description | Measure |
|---|---|---|
| | ♦ Clutch release force increased due to wear of clutch linings. | – Inform customer (higher release force with increased wear).<br>– Replace clutch disc. when the distance base/rivet is below 0.1 mm. |
| | ♦ Release bearing is tilted on the guide bushing, eroded. | – Replace defective components. |
| | ♦ Pressure plate with wrong spring identification. | – Assign pressure plate via the ⇒ Electronic catalogue of original parts . |
| | ♦ Mechanical fault at the pressure plate or the clutch disc. | – Replace defective components. |
| | ♦ Clutch disc on the serration sluggish/jams. | – Check the hub for damage (burrs), if necessary replace clutch disc.<br>– Clean the hub and the drive shaft teeth of corrosion and residues of lubricant and grease with grease for splines - G 000 100- . Move clutch disc back and forth. remove excess grease. |

| Fault | Fault description | Measure |
|---|---|---|
| Noises when operating the clutch. | ♦ Release bearing defective, guide of clutch release bearing not in order, contact surface drained off. | – Always replace noisy release bearing.<br>– Replace damaged guide bushings. |
| | ♦ Contact surface of the pressure plate defective (tips of membrane spring bent, broken). Release bearing is off-centre. | – Replace pressure plate.<br>– Check release bearing and guide bushing, replace if necessary.<br>– Check adjustment of clutch release lever.<br>– Check dowel sleeves. |
| | ♦ Centre displacement of engine/ gearbox. | – Check dowel sleeves. |
| | ♦ Clutch disc incorrectly installed. | – Correct the fitting. |
| | ♦ Wrong clutch disc installed. | – Assign clutch disc via the ⇒ Electronic catalogue of original parts . |

| Fault | Fault description | Measure |
|---|---|---|
| Rattling, scratching occurs when the forward or reverse gear is engaged, gearshift jams, is sluggish, shifting is not possible, clutch without operation. | ♦ Air in the system. clutch does not separate fully. | – Bleed and check system, top up with brake fluid. |

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| Fault | Fault description | Measure |
|---|---|---|
| | ♦ Master cylinder or slave cylinder is leaking, line is leaking. | – Replace defective component, top up with brake fluid, vent air from the line system. |
| | ♦ The travel of the clutch pedal is not sufficient (carpet, foot mat under the foot controls), clutch is not fully depressed. | – Inform customer. |
| | ♦ The pressure plate is bent due to incorrect installation, the clutch disc is deformed due improper handling. | – Check components, if necessary replace, make sure the centering pins are correctly fitted.<br>– If scratching still occurs. check the serration of the clutch disc on the drive shaft for ease of movement. if necessary repair the gearbox. |
| | ♦ Tips of membrane spring broken or bent (assembly fault, release bearing moves off-centre). | – Replace pressure plate.<br>– Check release bearing and guide bushing, replace if necessary.<br>– Check dowel sleeves. |
| | ♦ Clutch disc too thick. | – Assign clutch disc via the ⇒ Electronic catalogue of original parts . |
| | ♦ Deposit adhering to the flywheel (long immobilization time, high humidity). | – Slightly rub down friction surfaces of the clutch linings or replace completely the severely corroded parts. |
| | ♦ Clutch disc on the serration sluggish/jams. Corrosion on the hub, damage during the assembly. Hub profile knocked out on one side. | – Check the hub for damage, if necessary replace the clutch disc.<br>– Remove corrosion from the hub and the shaft as well as residues of lubricant. Grease shaft with a thin layer of grease for splines - G 000 100- .<br>– Move clutch disc back and forth. remove excess grease.<br>– Check the position of the dowel sleeves when the hub profile is knocked out.<br>– Check release bearing, guide bushing and pressure plate, replace if necessary. |
| | ♦ Lifting of pressure plate too low (wrong pressure plate installed). | – Assign pressure plate via the ⇒ Electronic catalogue of original parts . |
| | ♦ Displacement of engine/gearbox too large (dowel sleeves missing). support panel of clutch plate bent through this. | – Insert dowel sleeves before gearbox has been fitted.<br>– Check clutch disc and pressure plate for damage. if necessary replace. |

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| Fault | Fault description | Measure |
|---|---|---|
| | ♦ The lining is spalled off because of too high revs (shift back into lower gears during high speeds).<br>♦ Spalled off lining due to long slip of torque when starting. | – Replace clutch disc. Inform customer. |

| Fault | Fault description | Measure |
|---|---|---|
| Load alteration shocks when pushing the accelerator pedal down sharply and when the engine speed drops suddenly. | ♦ Assembly bearing is too soft. | – Inform customer. Assign hanger via the ⇒ Electronic catalogue of original parts . |
| | ♦ Irregular engine running. | – Check engine setting. correct. |
| | ♦ Clutch disc with predamper is built in against gear rattling. | – Inform customer. |
| | ♦ Centre displacement of engine/ gearbox. | – Test dowel sleeves. replace if necessary. |

| Fault | Fault description | Measure |
|---|---|---|
| Clutch slips through, no or bad pre-drive. | ♦ Wrong clutch disc fitted, wrong pressure plate installed. | – Assign the clutch disc and pressure plate via the ⇒ Electronic catalogue of original parts . |
| | ♦ Clutch disc worn out, burnt, pressure plate overheated, grooves, pressure plate deformed through incorrect assembly, compressive force of the pressure plate too low, driving error, natural wear. | – Replace clutch disc.<br>– Replace pressure plate.<br>– Inform customer. |
| | ♦ Clutch disc, pressure plate, flywheel - oily. Radial shaft seal of the engine or the gearbox defective. Grease on the contact surface through excess greasing of the hub. | – Replace clutch disc.<br>– Clean contact surfaces of pressure plate and flywheel.<br>– Replace radial shaft seal, remove excess grease from the drive shaft. |
| | ♦ Clutch disc installed the wrong way up. | – Correct installation. check clutch disc. replace if necessary. |
| | ♦ Flywheel depth too large or excessive abrasion on the contact surface of the lining. | – Assign the sealing flange via the ⇒ electronic catalogue of original parts .<br>– Inspect clutch disc and pressure plate, replace if necessary. |
| | ♦ Slave cylinder leaking. | – Replace slave cylinder. |

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| Fault | Fault description | Measure |
|---|---|---|
| Clutch jerking,<br>unit shaking. | ♦ Air in the system. | – Bleed system. check brake fluid level. check system for tightness.<br>– Replace defective part. |
| | ♦ Engine does not run clean. | – Check engine setting. correct. |
| | ♦ Driving error, speed too low when starting. | – Inform customer. |
| | ♦ Wrong clutch disc installed. | – Assign clutch disc via the ⇒ Electronic catalogue of original parts . |
| | ♦ Assembly bearing too soft, knocked out. | – Assign the assembly bracket via the ⇒ Electronic catalogue of original parts . |
| | ♦ Clutch lining oily, contact surface of pressure plate and flywheel oily (oil leakage from the clutch housing). | – Check radial shaft seal of the drive shaft for clutch or check crankshaft. if necessary replace.<br>– Replace clutch disc. clean pressure plate and flywheel. |
| | ♦ Release bearing on the guide bushing is tilted, seizured (presses on one side onto the membrane springs of the pressure plate). | – Replace release bearing and guide bushing.<br>– Check actuating elements and bearing for actuating elements. |
| | ♦ The contact surface of the pressure plate lifts off only unilaterally due to the tilted release bearing.<br>♦ The housing of the pressure plate was warped when installed. Contact surface of the pressure plate lifts off only unilaterally. | – Check the contact surface of the clutch lining on the flywheel, check pressure plate and membrane springs, replace pressure plate if necessary.<br>– Replace release bearing and guide bushing. |
| | ♦ Drive shaft too heavily greased (traces of grease on the clutch disc, pressure plate and flywheel). | – Clean pressure plate and flywheel free of grease, replace in the event of damage (traces of friction, heat dissipation, grooves).<br>– Remove traces of grease from hub and shaft, grease shaft with grease for splines - G 000 100- .<br>– Move clutch disc back and forth. remove excess grease. |

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| Fault | Fault description | Measure |
|---|---|---|
| Acoustic load alteration shock »click« when clutch is released. | ♦ Acceleration is assigned to the load carrier/drive shaft through the sudden press of the clutch pedal. The drive shaft serration of the pinions in mesh knocks, this noise is increased for clutch discs with noise insulation as the damping reaches the stop. | – Inform customer. |

| Fault | Fault description | Measure |
|---|---|---|
| Noises in idle. | ♦ Torsional damper spring kinked. | – Replace clutch disc. |
| | ♦ Clutch disc fitted without pre-damper (idle rattling). | – Assign clutch disc via the ⇒ Electronic catalogue of original parts . |
| | ♦ Pressure plate deformed, imbalance. | – Replace pressure plate. |
| | ♦ Irregular engine running. | – Check engine setting. correct if necessary. |
| | ♦ Displacement of engine/gearbox too large (dowel sleeves missing). | – Insert dowel sleeves before gearbox has been fitted. |
| | ♦ Intermediate plate grinds at flywheel. | – Insert intermediate plate on sealing flange and push onto the dowel sleeves. |

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# 34 – Controls, housing

## 1 Shift mechanism

⇒ “1.1 Fitting location of shift mechanism”, page 81

⇒ “1.2 Summary of components (Octavia II)”, page 83

⇒ “1.3 Summary of components (Superb II)”, page 84

⇒ “1.4 Summary of components (Yeti)”, page 85

⇒ “1.5 Summary of components - gearshift knob with collar (Octavia II)”, page 86

⇒ “1.6 Summary of components - gearshift knob with collar (Superb II)”, page 87

⇒ “1.7 Summary of components - Gearshift knob with collar (Yeti)”, page 88

⇒ “1.8 Removing and installing gearshift knob with shift lever collar (Octavia II)”, page 88

⇒ “1.9 Removing and installing gearshift knob with shift lever collar (Superb II)”, page 89

⇒ “1.10 Removing and installing gearshift knob with shift lever collar (Yeti)”, page 90

⇒ “1.11 Summary of components - Gearshift mechanism up to 10.06”, page 91

⇒ “1.12 Summary of components - Gearshift mechanism as of 11.06”, page 93

⇒ “1.13 Dismantling and assembling selector mechanism”, page 95

⇒ “1.14 Summary of components - Control cables up to 10.06”, page 101

⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103

⇒ “1.16 Plastic relay lever”, page 106

⇒ “1.17 Removing and installing shift mechanism (Octavia II)”, page 108

⇒ “1.18 Removing and installing shift mechanism (Superb II)”, page 112

⇒ “1.19 Removing and installing shift mechanism (Yeti)”, page 117

⇒ “1.20 Removing and installing shift cable and selector cable”, page 121

⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123

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## 1.1 Fitting location of shift mechanism

-Arrow A- Shift movement

-Arrow B- Selector movement

**A - Shift cable**

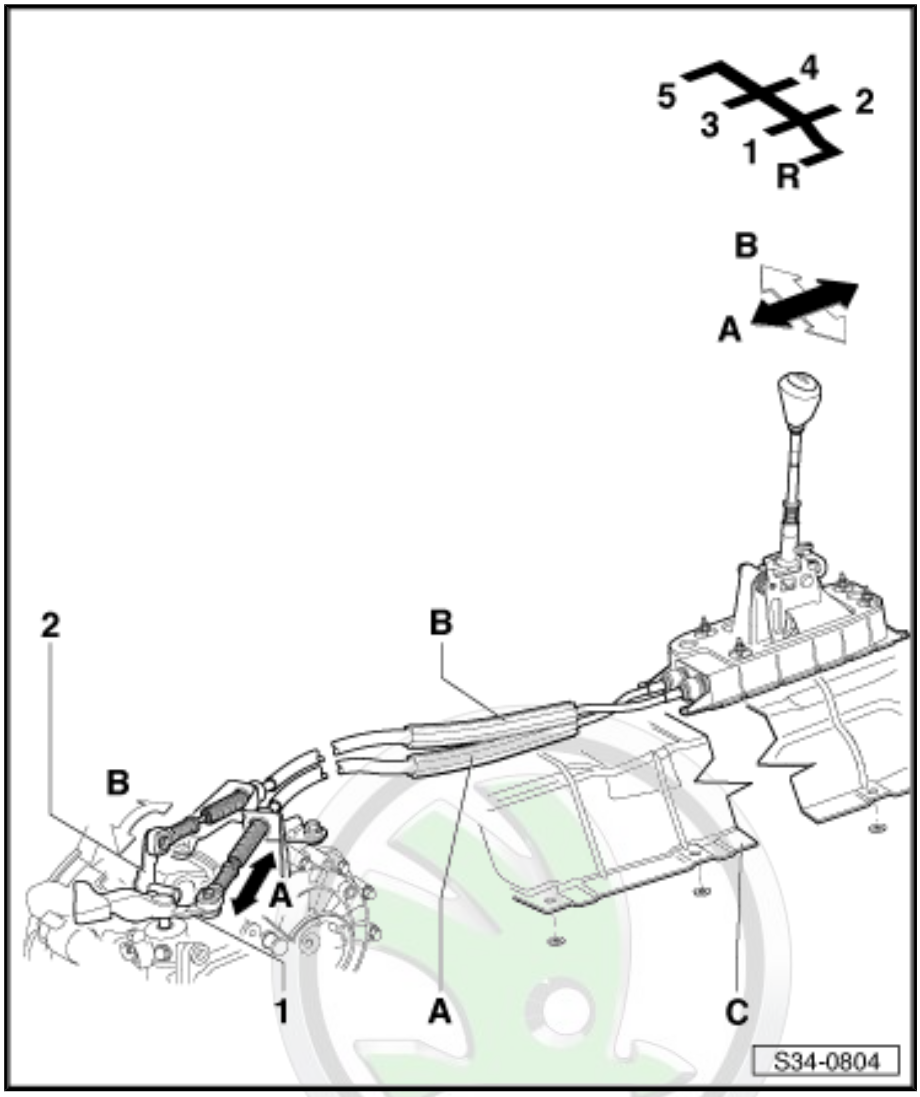
**B - Selector cable**

**C - Heat shield**

- ❑ Remove before removing selector mechanism

**1 - Gearshift lever**

**2 - Relay lever**




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## 1.2 Summary of components (Octavia II)

**Note**

- *After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*
- *Remove shift mechanism for replacing control cables*
  *⇒ "1.17 Removing and installing shift mechanism (Octavia II)", page 108 .*
- *Do not kink the control cables.*

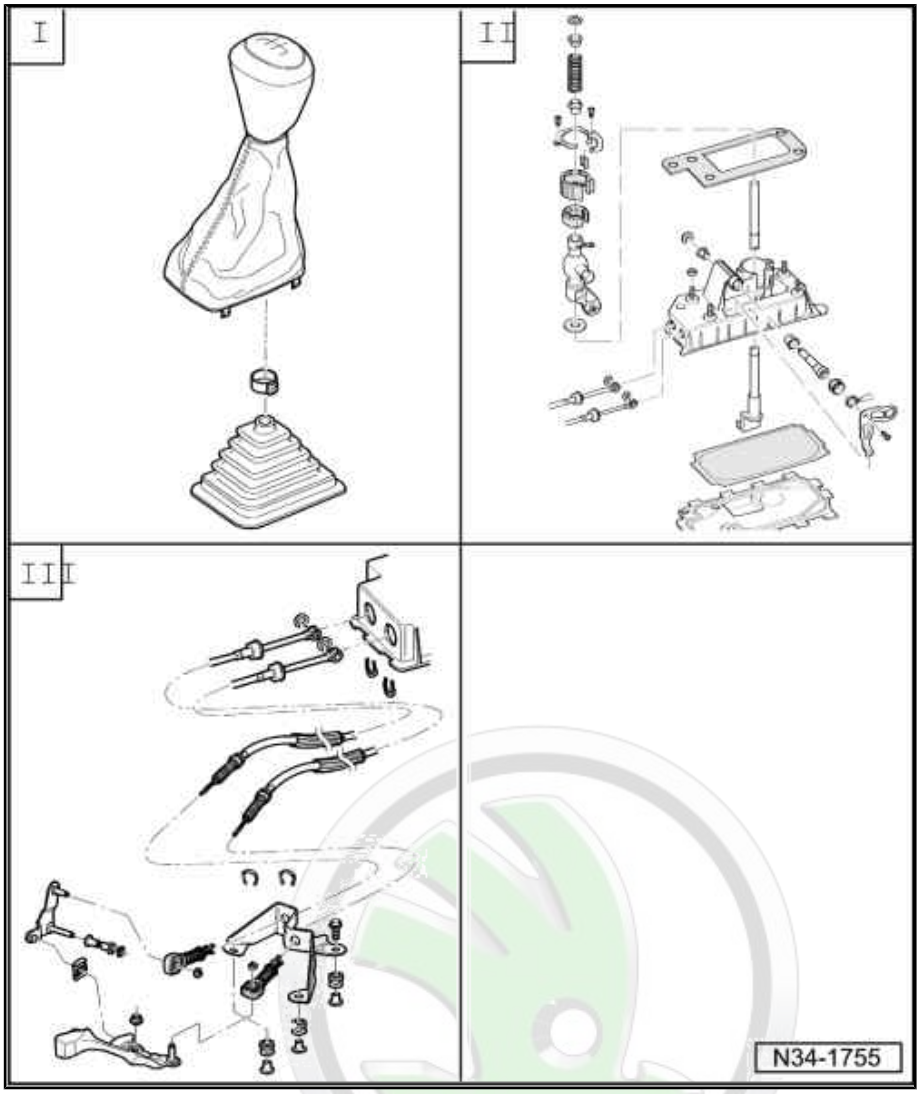
I - Summary of components - Gearshift knob with shift lever collar
⇒ "1.5 Summary of components - gearshift knob with collar (Octavia II)", page 86

II - Summary of components - Gearshift mechanism up to 10.06
⇒ "1.11 Summary of components - Gearshift mechanism up to 10.06", page 91

II - Summary of components - Gearshift mechanism as of 11.06
⇒ "1.12 Summary of components - Gearshift mechanism as of 11.06", page 93

III - Summary of components - Control cables up to 10.06
⇒ "1.14 Summary of components - Control cables up to 10.06", page 101

III - Summary of components - Control cables as of 11.06
⇒ "1.15 Summary of components - Control cables as of 11.06", page 103




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## 1.3 Summary of components (Superb II)

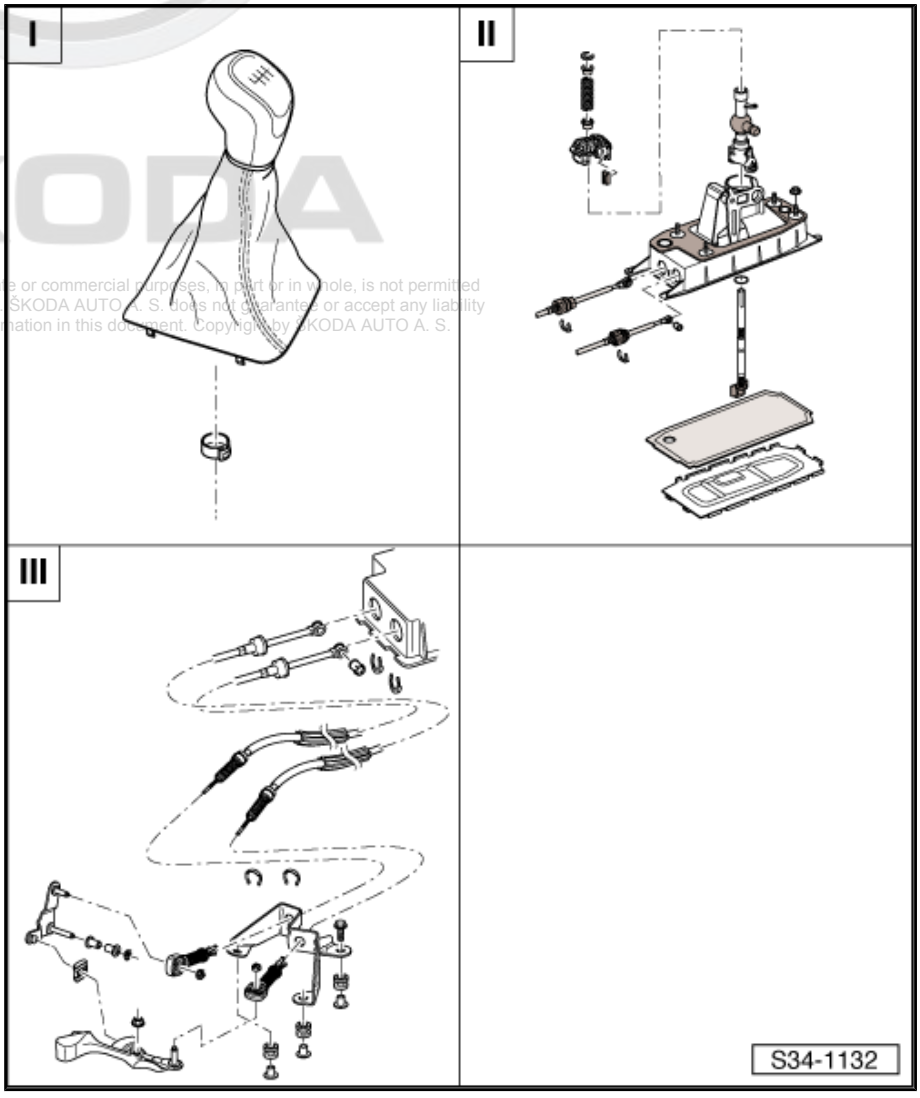
**Note**

- *After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*
- *Remove shift mechanism for replacing control cables ⇒ "1.18 Removing and installing shift mechanism (Superb II)", page 112 .*
- *Do not kink the control cables.*

I - Summary of components - Gearshift knob with shift lever collar
⇒ "1.6 Summary of components - gearshift knob with collar (Superb II)", page 87

II - Summary of components - Gearshift mechanism
⇒ "1.12 Summary of components - Gearshift mechanism as of 11.06", page 93

III - Summary of components - Control cables
⇒ "1.15 Summary of components - Control cables as of 11.06", page 103




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## 1.4 Summary of components (Yeti)

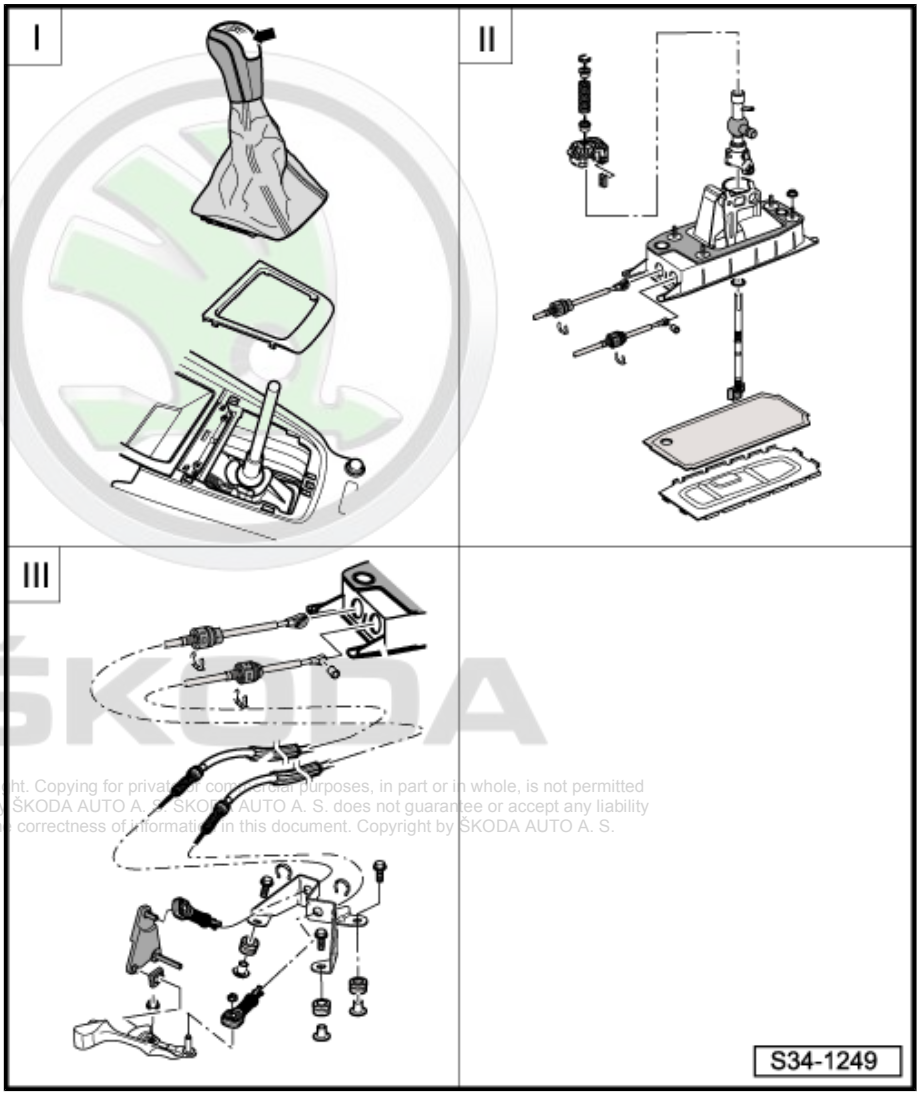
**Note**

- *After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*
- *Remove shift mechanism for replacing control cables*
  *⇒ "1.19 Removing and installing shift mechanism (Yeti)", page 117 .*
- *Do not kink the control cables.*

**I - Summary of components - Gearshift knob with shift lever collar**
⇒ "1.7 Summary of components - Gearshift knob with collar (Yeti)", page 88 .

**II - Summary of components - Gearshift mechanism**
⇒ "1.12 Summary of components - Gearshift mechanism as of 11.06", page 93 .

**III - Summary of components - Control cables**
⇒ "1.15 Summary of components - Control cables as of 11.06", page 103 .




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# 1.5 Summary of components - gearshift knob with collar (Octavia II)

**1 - Gearshift knob**

- ❑ with collar
- ❑ The gearshift knob and collar can be separated from each other (when separating, the circlip is damaged)
- ❑ Removing and installing ⇒ “1.8 Removing and installing gearshift knob with shift lever collar (Octavia II)”, page 88
- ❑ Plaque of gearshift lever can only be separated from the gearshift knob e.g. with a screwdriver
- ❑ Assignment ⇒ Electronic Catalogue of Original Parts

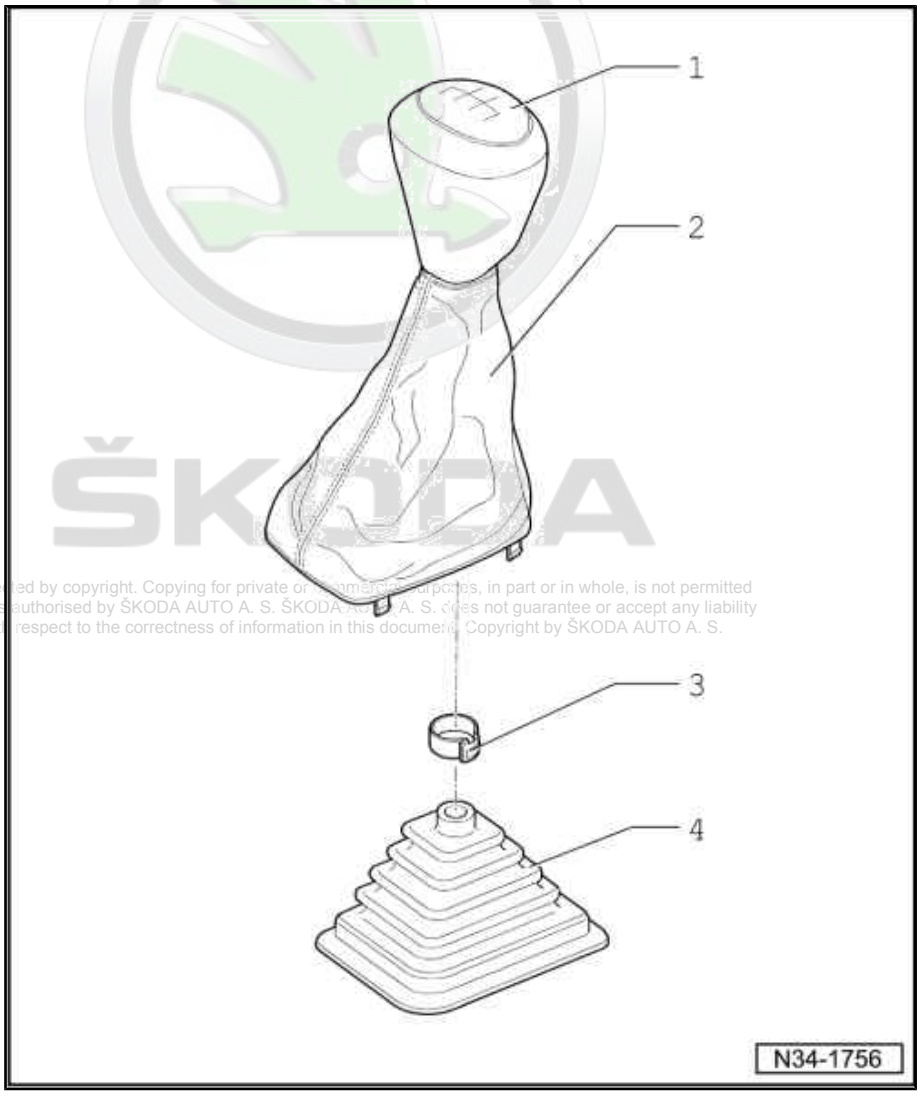
**2 - Collar**

**3 - Clamp**

- ❑ For securing gearshift knob to gear lever
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**4 - Noise insulation**

- ❑ not fitted to all vehicles
- ❑ Catch pegs are positioned at different distances
- ❑ therefore can only be inserted in one position




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## 1.6 Summary of components - gearshift knob with collar (Superb II)

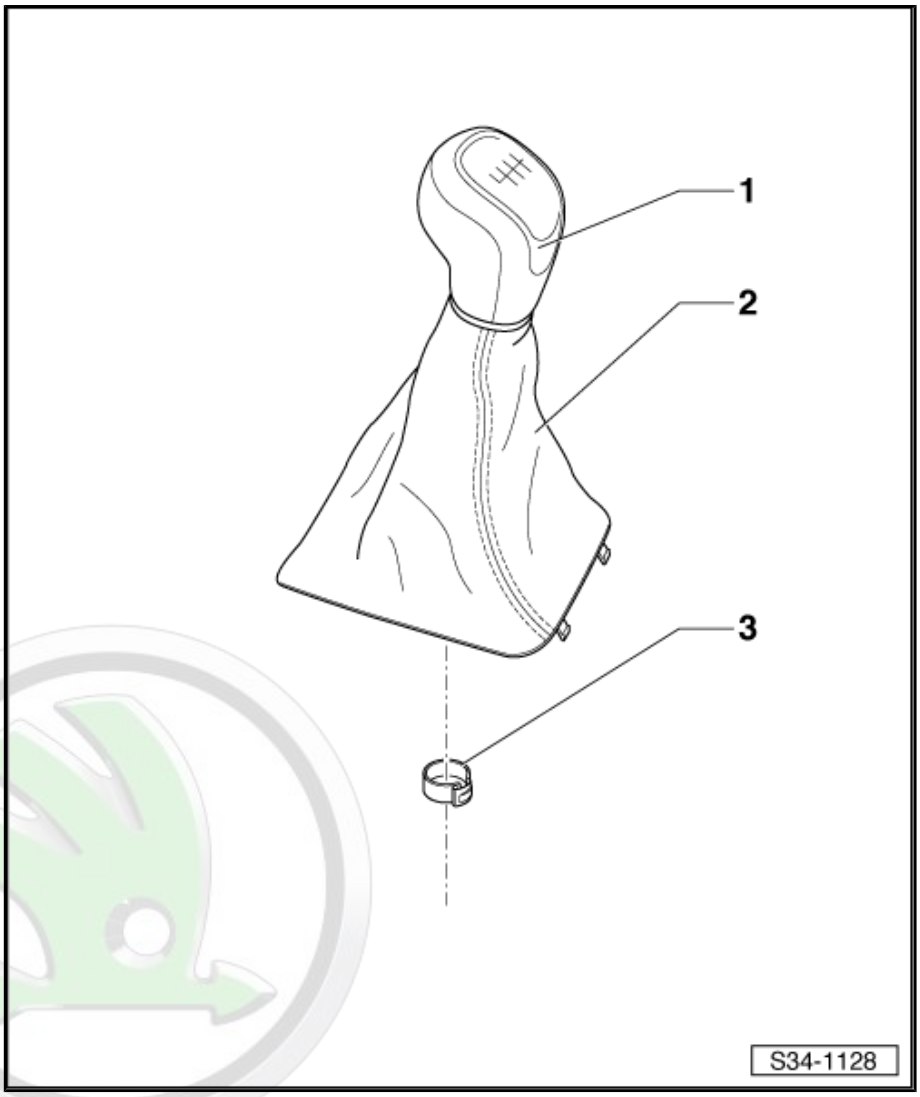
**1 - Gearshift knob**

- ❑ with collar
- ❑ the gearshift knob and collar cannot be separated
- ❑ Removing and installing ⇒ “1.9 Removing and installing gearshift knob with shift lever collar (Superb II)”, page 89
- ❑ Plaque of gearshift lever can only be separated from the gearshift knob e.g. with a screwdriver
- ❑ always replace together ⇒ Electronic Catalogue of Original Parts

**2 - Collar**

**3 - Clamp**

- ❑ For securing gearshift knob to gear lever
- ❑ always replace ⇒ Electronic Catalogue of Original Parts




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## 1.7 Summary of components - Gearshift knob with collar (Yeti)

**1 - Gearshift knob**

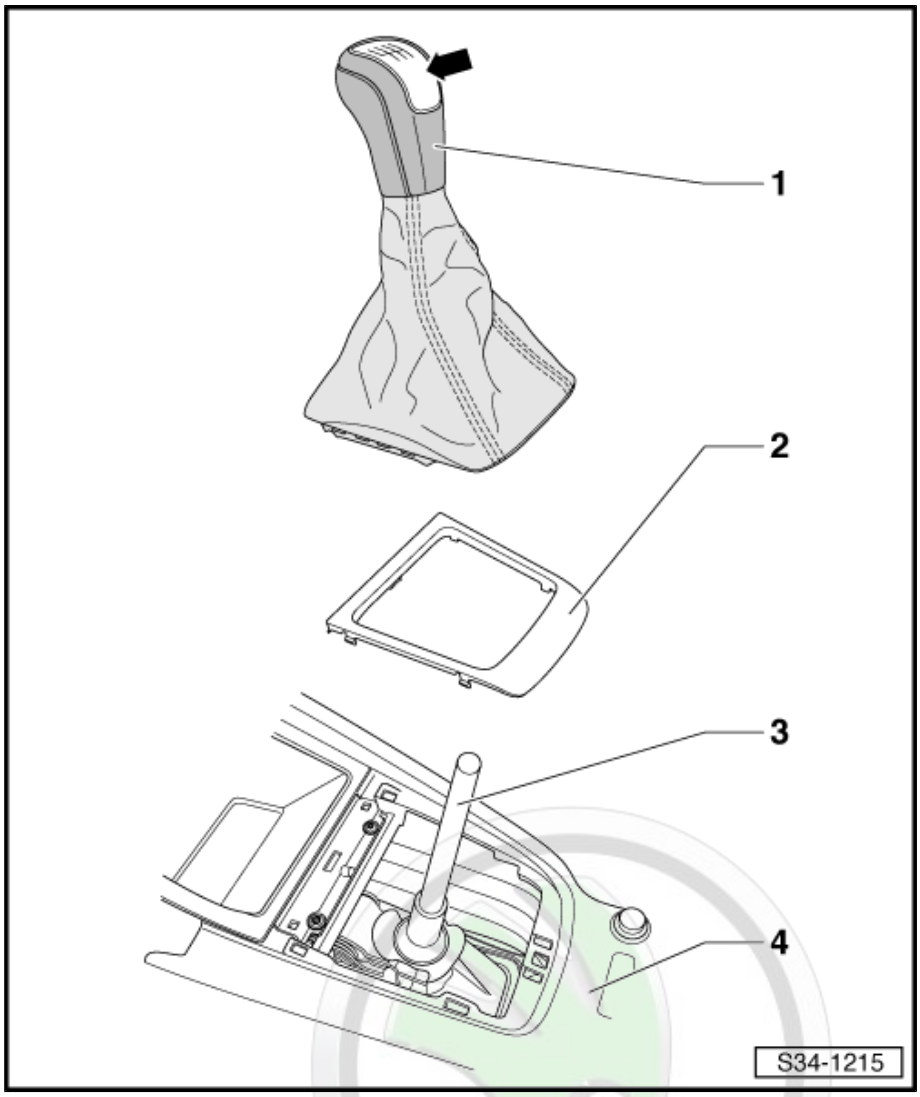
- ❑ with collar
- ❑ the gearshift knob and collar cannot be separated
- ❑ Plaque -arrow- of gearshift lever can be separated from the gearshift knob e.g. with a screwdriver
- ❑ always replace together ⇒ Electronic Catalogue of Original Parts
- ❑ Assignment ⇒ Electronic Catalogue of Original Parts
- ❑ Removing and installing ⇒ “1.10 Removing and installing gearshift knob with shift lever collar (Yeti)”, page 90

**2 - Cover**

- ❑ for centre console
- ❑ lever off from the centre console with the release tool - T30098-

**3 - Gearshift lever**

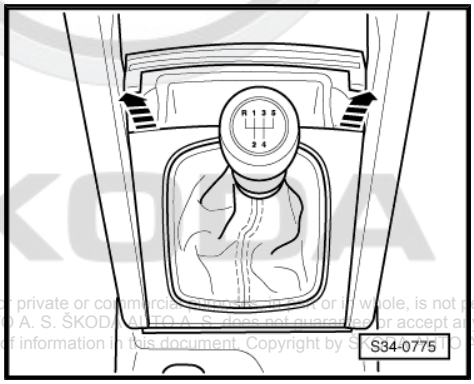
**4 - Centre console**




## 1.8 Removing and installing gearshift knob with shift lever collar (Octavia II)

– Lever the collar upwards and out of centre console surround -arrows-.

– Pull collar upwards, inside out over gear knob.




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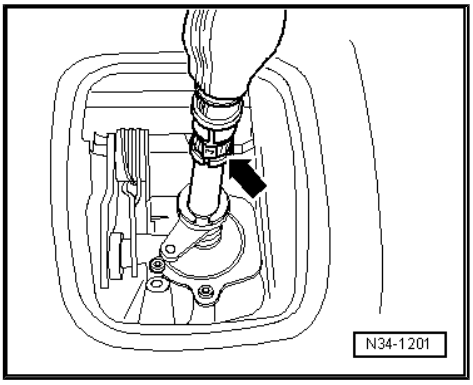
– Open clamp -arrow- and pull off gearshift knob together with the collar.

**Installing**

– Turn collar inside out.

– Insert gearshift knob and collar and compress new collar clamp -arrow-.

When inserting the gearshift knob on the shift lever the gearshift knob must lock into the round slot of the gearshift lever.



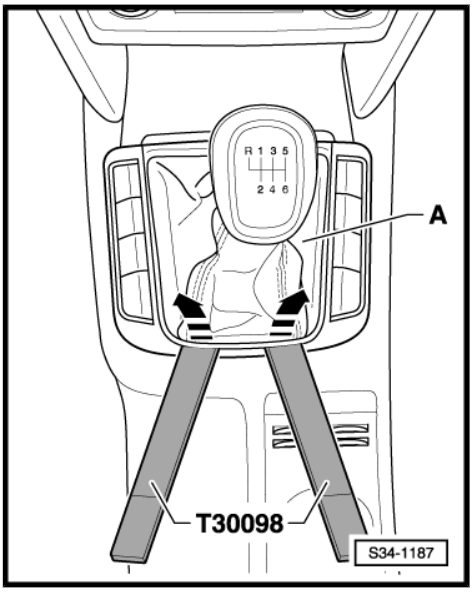

## 1.9 Removing and installing gearshift knob with shift lever collar (Superb II)

**Special tools and workshop equipment required**

♦ Release tool - T30098-

– Lever the collar -A- upwards and out of the centre console surround using the release tool - T30098- -arrows-.

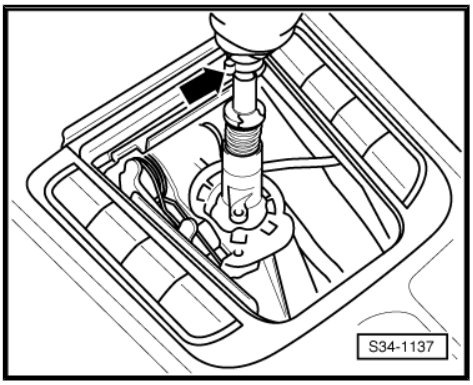
– Pull collar upwards, inside out over gear knob.




– Open clamp -arrow- and pull off gearshift knob together with the collar.

**Installing**

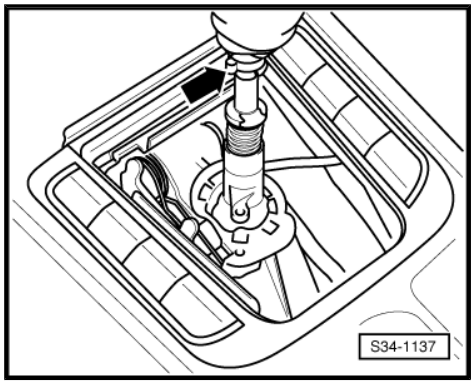
– Turn collar inside out.




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– Insert gearshift knob and collar and compress new collar clamp -arrow-.

When inserting the gearshift knob on the shift lever the gearshift knob must lock into the round slot of the gearshift lever.



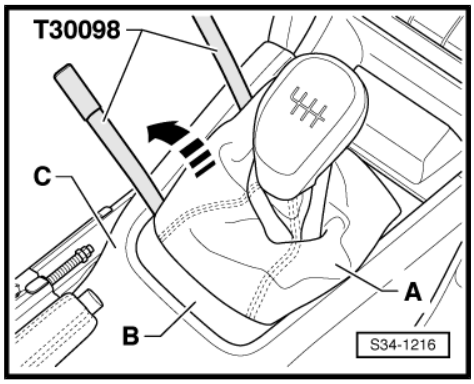

## 1.10 Removing and installing gearshift knob with shift lever collar (Yeti)

**Special tools and workshop equipment required**

- Release tool - T30098-

– Lever the collar -A- together with the surround -B- off the centre console -C- using the release tool - T30098- -direction of arrow-.

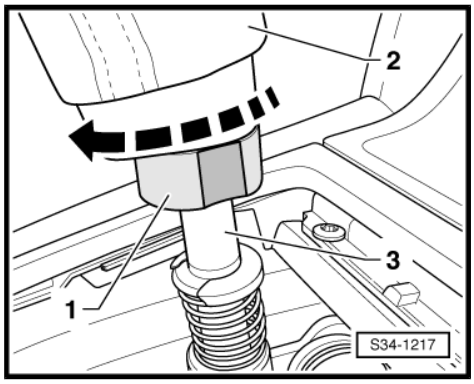
– Pull collar upwards, inside out over gear knob.




– Turn locking mechanism -1- 45° to the right -direction of arrow-.

– Pull off the gearshift knob together with the collar -2- from the shift lever -3-.

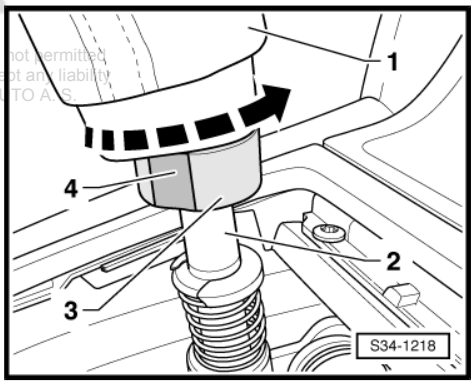
**Installing**




– Turn collar -1- inside out.

– Push the gearshift knob together with the collar -1- as far as the stop onto the shift lever -2-.

– Turn locking mechanism -1- 45° to the left -direction of arrow-. While doing so, the surface -4- must point to the driver or front passenger seat.

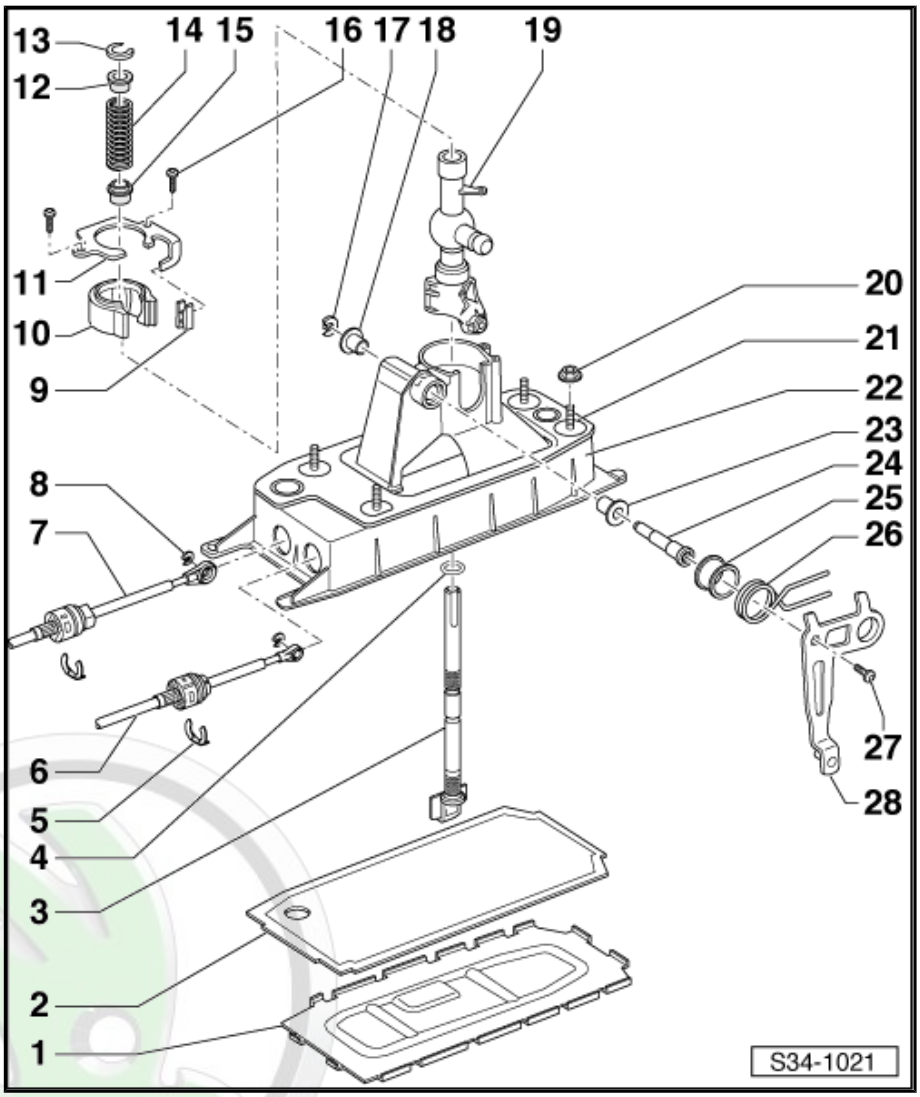



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# 1.11 Summary of components - Gearshift mechanism up to 10.06

**Note**

*Grease all bearing points and contact surfaces with grease -G 000 450 02- .*




**1 - Floor plate**

- ❑ bend up tabs for removing
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**2 - Seal**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**3 - Gearshift lever**

**4 - O-ring**

- ❑ in case of damage replace ⇒ Electronic Catalogue of Original Parts

**5 - Locking clip**

- ❑ do not damage cables when removing
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**6 - Selector cable**

- ❑ Removing and installing ⇒ “1.20 Removing and installing shift cable and selector cable”, page 121
- ❑ Fitting position ⇒ “1.1 Fitting location of shift mechanism”, page 81
- ❑ Adjust ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123

**7 - Shift cable**

- ❑ Removing and installing ⇒ “1.20 Removing and installing shift cable and selector cable”, page 121
- ❑ Fitting position ⇒ “1.1 Fitting location of shift mechanism”, page 81
- ❑ Adjust ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123

**8 - Circlip**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**9 - Damper**

- ❑ for pressure spring Pos. 26

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**10 - Bearing shell**

**11 - Cover**

**12 - Bushing**

**13 - Circlip**

- ❑ Removing and installing ⇒ page 93

**14 - Pressure spring**

- ❑ Removing and installing ⇒ page 93

**15 - Bushing**

**16 - Screw**

- ❑ 5 Nm

**17 - Circlip**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**18 - Bushing**

**19 - Shift lever guide**

**20 - Nut**

- ❑ M6 - 8 Nm
- ❑ M8 - 25 Nm

**21 - Seal**

- ❑ between shift housing and body
- ❑ self-adhesive

**22 - Shift housing**

**23 - Bushing**

**24 - Bearing shaft**

**25 - Guide bushing**

- ❑ push onto shift housing

**26 - Pressure spring**

- ❑ installing ⇒ page 93

**27 - Screw**

- ❑ 5 Nm

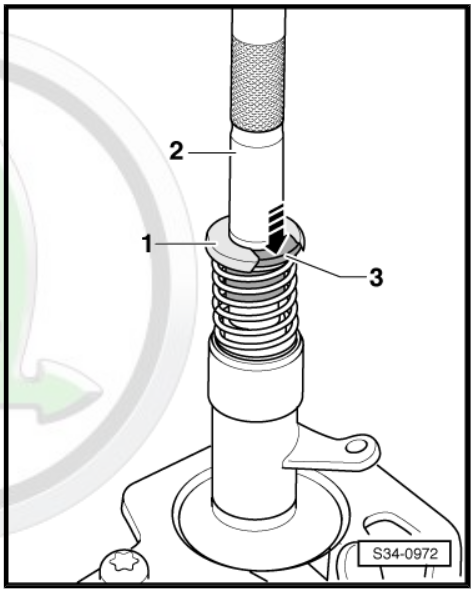
**28 - Selector angle plate**

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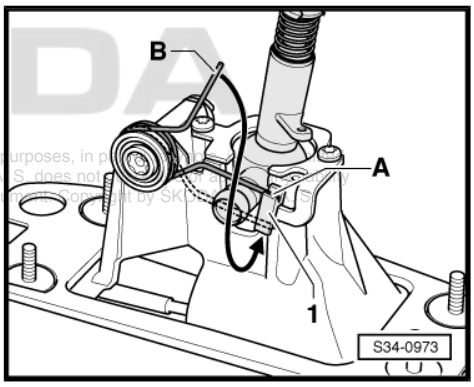
**Removing and installing circlip**

– Hold the gearshift lever -2-.
– Press spacer sleeve -3- in -direction of arrow-.
– Take off circlip -1-.




**Install pressure spring**

– Insert the clamp -A- of the pressure spring from the top into the guide -1-.
– Press the clamp -B- of the pressure spring downwards and insert from the bottom into the guide.




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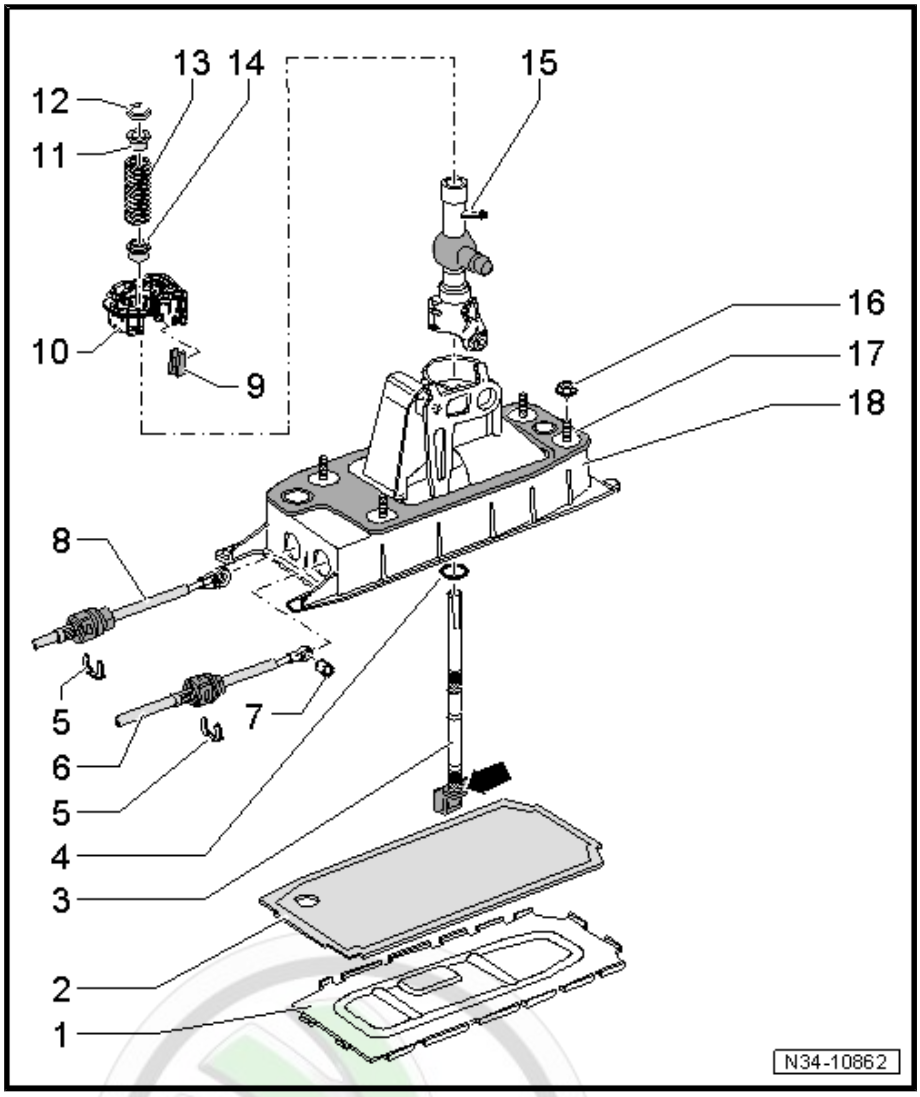
**Note**

*The illustration shows without the removed selector angle plate.*

## 1.12 Summary of components - Gearshift mechanism as of 11.06

**Note**

*Grease all bearing points and contact surfaces with grease -G 000 450 02- .*




**1 - Cover**

- ❑ bend up tabs for removing
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**2 - Seal**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**3 - Gearshift lever**

**4 - O-ring**

- ❑ insert onto gearshift lever -arrow- up to the stop
- ❑ in case of damage replace ⇒ Electronic Catalogue of Original Parts

**5 - Locking clip**

- ❑ do not damage cables when removing
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**6 - Selector cable**

- ❑ Removing and installing ⇒ “1.20 Removing and installing shift cable and selector cable”, page 121
- ❑ Fitting position ⇒ “1.1 Fitting location of shift mechanism”, page 81
- ❑ Adjust ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123

**7 - Bush for selector cable**

**8 - Shift cable**

- ❑ Removing and installing ⇒ “1.20 Removing and installing shift cable and selector cable”, page 121
- ❑ Fitting position ⇒ “1.1 Fitting location of shift mechanism”, page 81
- ❑ Adjust ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123

**9 - Damper**

- ❑ Removing and installing ⇒ page 95

**10 - Bearing shell**

- ❑ Removing and installing ⇒ “1.13 Dismantling and assembling selector mechanism”, page 95
- ❑ when removing. the catches of the bearing shell are usually damaged
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**11 - Bushing**

**12 - Circlip**

- ❑ Removing and installing ⇒ page 95

**13 - Pressure spring**

- ❑ Removing and installing ⇒ page 93

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**14 - Bushing**

**15 - Shift lever guide**

- ❑ Removing and installing ⇒ “1.13 Dismantling and assembling selector mechanism”, page 95

**16 - Nut**

- ❑ M6 - 8 Nm
- ❑ M8 - 25 Nm

**17 - Seal**

- ❑ between shift housing and body
- ❑ self-adhesive

**18 - Shift housing**

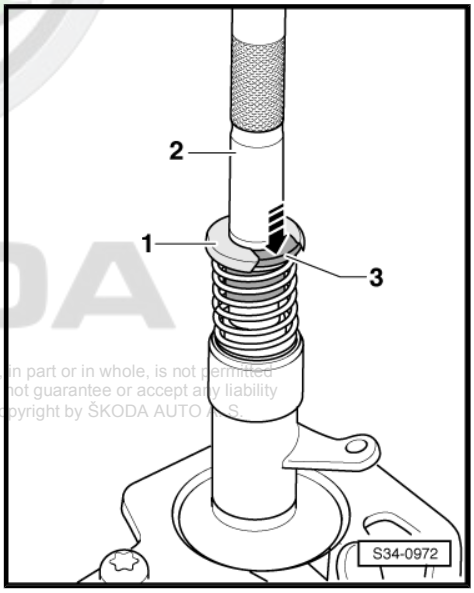
- ❑ with pressure spring and selector angle
- ❑ Pressure spring as well as selector angle cannot be removed

**Removing and installing circlip**

– Hold the gearshift lever -2-.

– Press spacer sleeve -3- in -direction of arrow-.

– Take off circlip -1-.



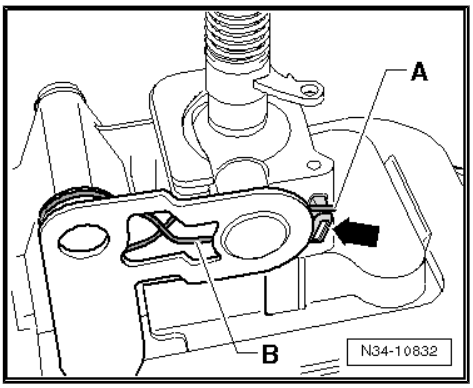

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**Removing and installing damping -arrow-**

– Press the pressure spring arm -A- as far as possible to the left until it is located outside the damping -arrow-.

– Press the shift lever to the lift and pull off the damping.

• After installing the damper. the pressure spring legs -A- and -B- must rest on the damper -arrow-.




## 1.13 Dismantling and assembling selector mechanism

**Special tools and workshop equipment required**

♦ Insert base - T10083-

♦ Grease - G 000 450 02-

## 1.13.1 Dismantling

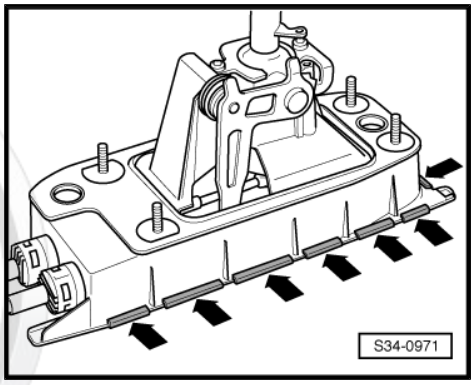
– Remove gearshift mechanism (Octavia II)
⇒ “1.17 Removing and installing shift mechanism (Octavia II)”, page 108 .

– Removing gearshift mechanism (Superb)
⇒ “1.18 Removing and installing shift mechanism (Superb II)”, page 112 .

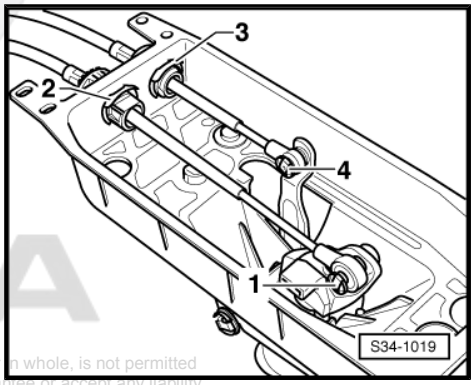
– Remove gearshift mechanism (Yeti)
⇒ “1.19 Removing and installing shift mechanism (Yeti)”, page 117 .

– Bend up tabs -arrows- of cover for the shift mechanism using a screwdriver and remove cover.

– Remove gasket ring.




– Remove lock washers -2 and 3- (lock washers -1 and 4- are no longer available), selector cable and shift cable must be levered off from the gearshift lever or relay lever e.g. with a screwdriver.

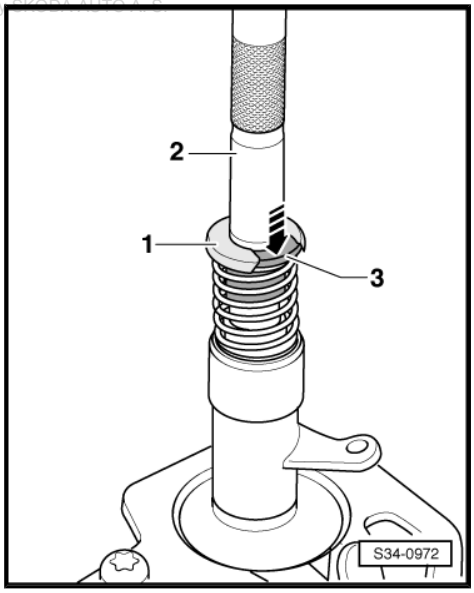



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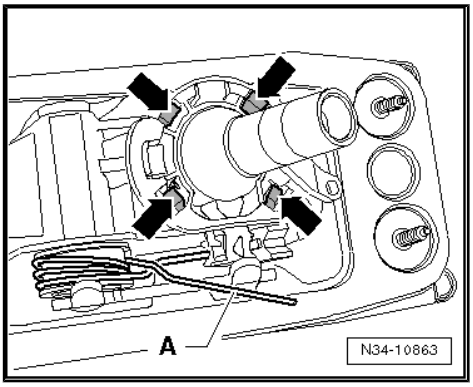
– Remove shift lever.

**Note**

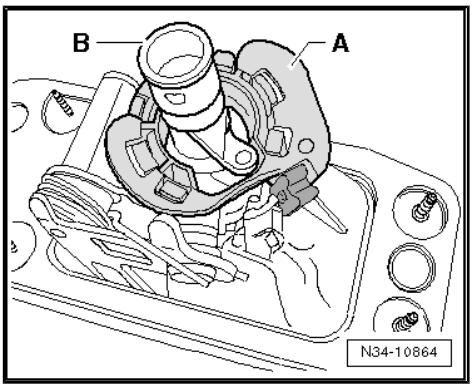
- *Hold the gearshift lever -2-.*
- *Press spacer sleeve -3- in -direction of arrow-.*
- *Take off circlip -1-.*



– Offset the top pressure spring arm -A- via the peg of the selector angle.
– Press the catches of the bearing shell -arrows- e.g. with a screwdriver in -direction of arrow- (the catch can break off).




– Slacken bearing shell -A- and shift lever guide -B- from shift housing.
– Remove bearing shell -A- from shift lever guide -B-.

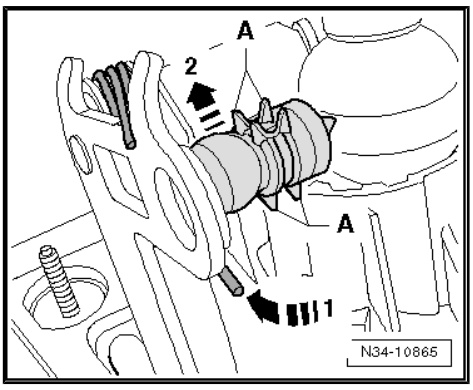



– Press bottom pressure spring arm -arrow 1- onto shoulder of selector angle.

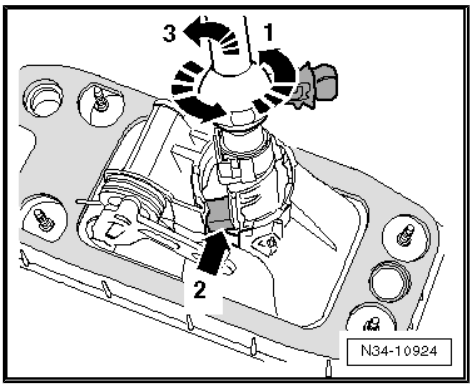
**Note**

*When removing the shift lever guide, the guides -A- must not be damaged.*

– Lever the lower leg of the pressure spring up to the stop onto the shoulder at the selector angle plate -direction of arrow 1-.
– Now pull up the shift lever guide as far as the stop and pull the ball stud out of the selector angle plate -direction of arrow 2-.




– Then turn the shift lever guide in -direction of arrow 1-.
• The stud -arrow 2- must be located in the recess of the shift housing.
– Afterwards, swivel out the shift lever guide with shift lever in -direction of arrow 3-.




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## 1.13.2 Assembling

**Caution**

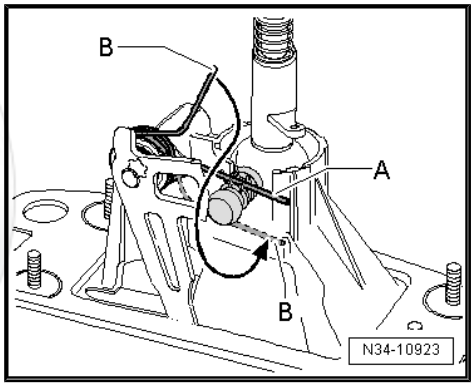
*The lower leg of the pressure spring ( ⇒ page 97 ) can jump off uncontrolled from the shoulder of the selector angle during further handling.*

– Thus carefully press down the lower leg from the shoulder of the selector angle plate.

The legs of the pressure spring tighten “crosswise” with a loud noise.

– To slacken, turn around the legs of the pressure spring -A- and -B- towards the right.

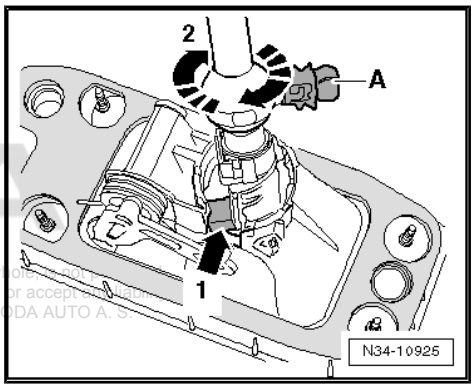
• The legs -A- and -B- must point in the opposite direction. Shown here for inserted shift lever guide.




– Insert shift lever guide with shift lever into the shift housing.

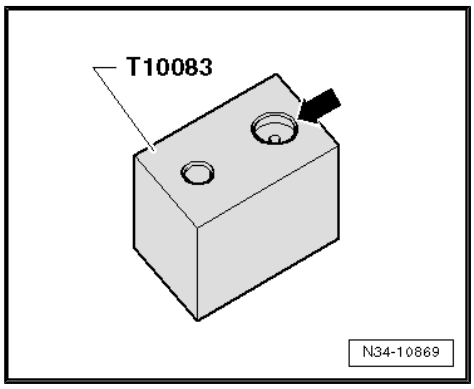
• The stud -arrow 1- is still located in the recess of the shift housing.

– Turn shift lever guide in -direction of arrow 2-, until the ball stud -A- is above the recess of the shift housing.




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– Position shift housing with shift lever guide into the larger recess -arrow- of the Insert base - T10083- .



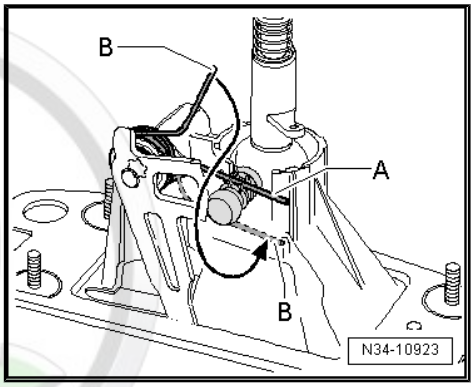

**Note**

*If necessary. first of all remove the shift lever so that the shift housing with shift lever guide can be inserted in the insert base .*

- The shift lever guide must protrude out of the shift housing as far as the stop.

– Insert the leg -A- of the pressure spring from the top into the guide.

– Pull leg -B- of pressure spring downwards and insert the leg -B- next to the guide (in direction of the spherical head).




**Note**

*To provide a clearer illustration, the selector angle plate is only partially illustrated.*

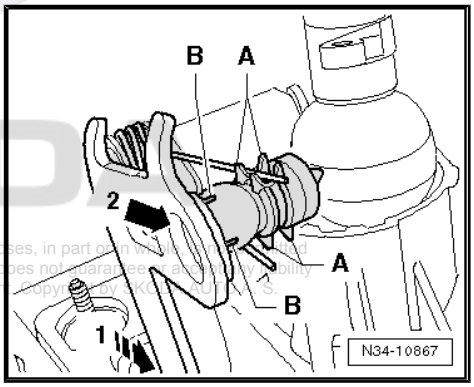
– Carefully remove shift housing with shift lever guide from the insert base - T10083- .

– Move selector angle plate up to stop to the rear (opposite the location holes for shift and selector cable) -direction of arrow 1-.

– Grease the ball stud with grease - G 000 450 02- .

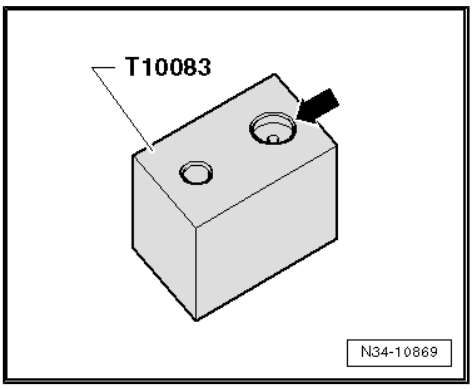
– Press the ball stud into the selector angle plate -arrow 2-.

- The guides -A- and the tabs -B- must not be damaged.




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– Position shift housing with shift lever guide into the larger recess -arrow- of the Insert base - T10083- .



- The shift lever guide must protrude out of the shift housing as far as the stop.

– Lift the upper leg -A- of the pressure spring over the stud of the selector angle plate.

- Use a new bearing shell -B-.

– Grease the bearing shell and the bearing ball of the shift lever guide with grease - G 000 450 02- .

– Press the bearing shell up to stop onto the bearing ball of the shift lever guide.

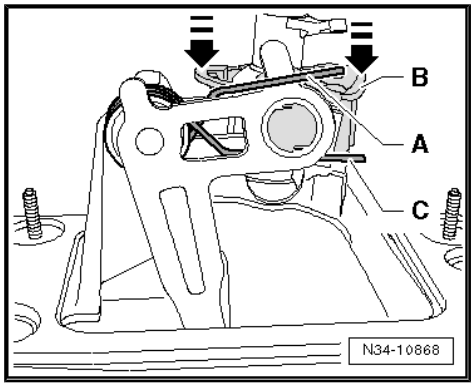
– Remove shift housing from the insert base - T10083- .

– Press the bearing shell into the shift housing -arrows-.

- All catch pegs must click audibly.

– Insert the lower leg -C- of the pressure spring into the guide.

– Lift the upper leg -A- of the pressure spring over the stud of the selector angle plate into the guide.

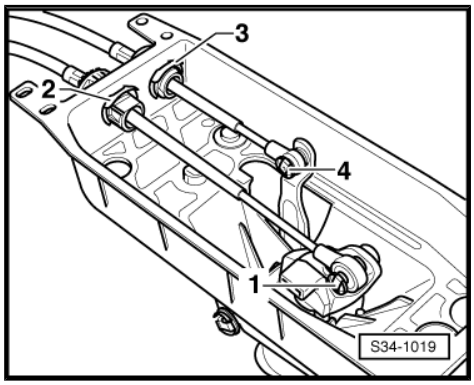



**Note**

*Install the shift lever if it was removed.*

– Attach shift cable and selector cable to shift housing with lock washers -2 and 3-.

– Press shift cable and selector cable onto shift lever and selector lever into shift housing (lock washers -1 and 4- are no longer available).



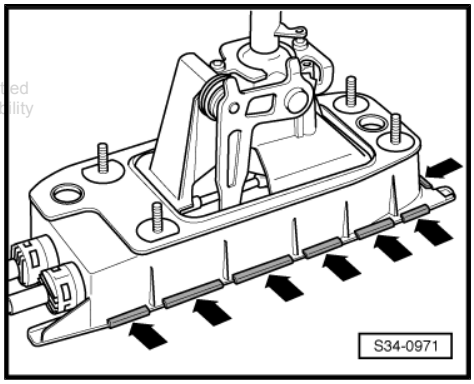

– Install gasket and attach cover for shift mechanism by bending up the tabs -arrows-.

– Install gearshift mechanism (Octavia II) ⇒ “1.17 Removing and installing shift mechanism (Octavia II)”, page 108 .

– Install gearshift mechanism (Superb II) ⇒ “1.18 Removing and installing shift mechanism (Superb II)”, page 112 .

– Install gearshift mechanism (Yeti) ⇒ “1.19 Removing and installing shift mechanism (Yeti)”, page 117 .

– Setting the clutch control (Octavia II, Superb II and Yeti) ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123 .

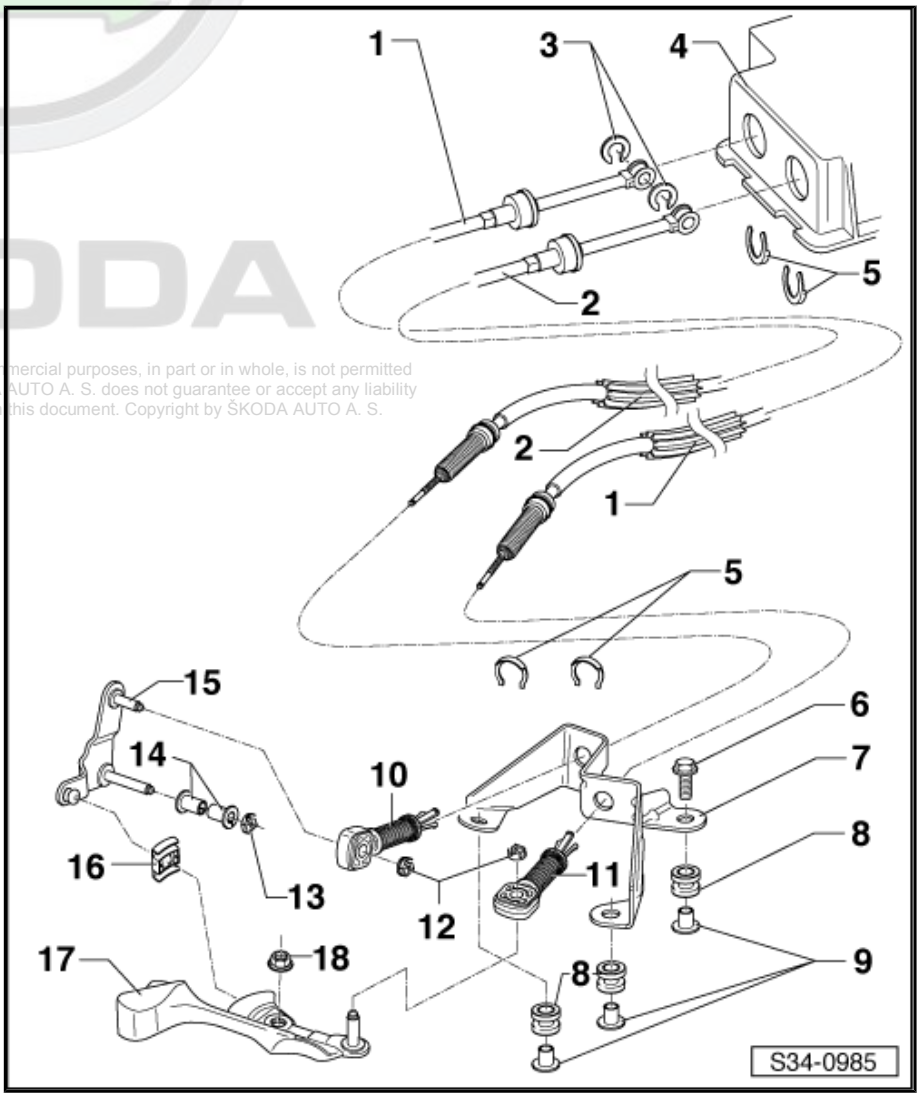



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# 1.14 Summary of components - Control cables up to 10.06

**Note**

*Grease all bearing points and contact surfaces with grease -G 000 450 02- .*




**1 - Shift cable**

- ❑ connect to cable lock Pos. 11
- ❑ Fitting position ⇒ “1.1 Fitting location of shift mechanism”, page 81
- ❑ Removing and installing ⇒ “1.20 Removing and installing shift cable and selector cable”, page 121
- ❑ Adjust ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123
- ❑ attach with cable strap to the selector cable ⇒ page 106
- ❑ as of 11.06 the attachment of the control cable in the shift housing is modified ⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103

**2 - Selector cable**

- ❑ connect to cable lock Pos. 10
- ❑ Fitting position ⇒ “1.1 Fitting location of shift mechanism”, page 81
- ❑ Removing and installing ⇒ “1.20 Removing and installing shift cable and selector cable”, page 121
- ❑ Adjust ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123
- ❑ attach with cable strap to the shift cable ⇒ page 106
- ❑ as of 11.06 the attachment of the control cable in the shift housing is modified ⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103

**3 - Circlips**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ as of 11.06 the lock washers are no longer available ⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103

**4 - Shift housing**

**5 - Locking clips**

- ❑ do not damage cables when removing

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- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**6 - Screw**

- ❑ 3 units
- ❑ for cable support
- ❑ 20 Nm

**7 - Cable support**

- ❑ made out of plastic or metal

**8 - Grommet**

- ❑ Mounting of cable support to gearbox

**9 - Bushing**

**10 - Cable lock**

- ❑ Selector cable at relay lever
- ❑ After installing, set shift mechanism
  ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123
- ❑ do not interchange, cable locks for selector cable at relay lever and for shift cable at gearshift lever are different ⇒ page 105
- ❑ unlock ⇒ page 124 for setting the gearshift mechanism
- ❑ as of 06.07 it is fitted together with plastic relay lever ⇒ “1.16 Plastic relay lever”, page 106
- ❑ remove from plastic relay lever ⇒ “1.16 Plastic relay lever”, page 106
- ❑ press onto plastic relay lever ⇒ “1.16 Plastic relay lever”, page 106

**11 - Cable lock**

- ❑ Shift cable at gearbox shift lever
- ❑ After installing, set shift mechanism
  ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123
- ❑ do not interchange, cable locks for selector cable at relay lever and for shift cable at gearshift lever are different ⇒ page 105
- ❑ unlock ⇒ page 124 for setting the gearshift mechanism

**12 - Circlips**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ is not required for cable locks for selector cable at relay lever, if relay lever is made of plastic

**13 - Circlip**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ is not required. if the relay lever is made of plastic

**14 - Bushings**

- ❑ is not required. if the relay lever is made of plastic

**15 - Relay lever**

- ❑ Fitting position ⇒ page 106
- ❑ After installing, set shift mechanism
  ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123
- ❑ as of 06.07 the reversing level is plastic
- ❑ Removing and installing plastic relay lever together with cable lock
  ⇒ “1.16 Plastic relay lever”, page 106
- ❑ if the relay lever is made of plastic, neither of the bushings Pos. 14 are required

**16 - Sliding shoe**

**17 - Gearshift lever**

- ❑ with balancing weight
- ❑ insert in such a way that the interrupted spacing of the teeth matches the gearshift shaft ⇒ page 106
- ❑ Fitting position ⇒ page 106

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- ❑ after installing set shift mechanism
  ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123
- ❑ as of 06.06 the diameter of the fixing bolts is smaller 06.06 ⇒ page 105

**18 - Nut**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 23 Nm

## 1.15 Summary of components - Control cables as of 11.06

**Note**

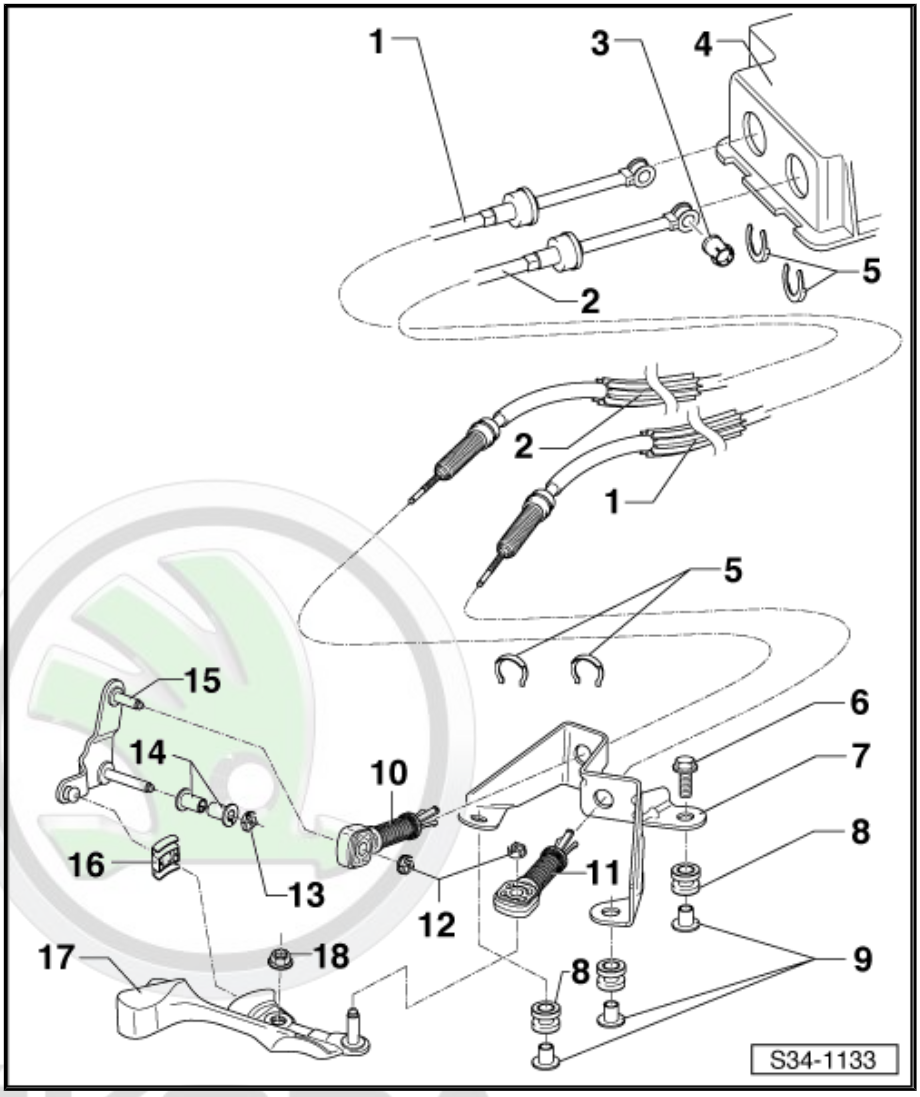
*Grease all bearing points and contact surfaces with grease -G 000 450 02- .*

**1 - Shift cable**

- ❑ connect to cable lock Pos. 11
- ❑ Fitting position ⇒ “1.1 Fitting location of shift mechanism”, page 81
- ❑ Removing and installing ⇒ “1.20 Removing and installing shift cable and selector cable”, page 121
- ❑ Adjust ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123
- ❑ attach with cable strap to the selector cable ⇒ page 106
- ❑ as of 11.06 the attachment of the control cable in the shift housing Pos. 4 is modified

**2 - Selector cable**

- ❑ connect to cable lock Pos. 10
- ❑ Fitting position ⇒ “1.1 Fitting location of shift mechanism”, page 81
- ❑ Removing and installing ⇒ “1.20 Removing and installing shift cable and selector cable”, page 121
- ❑ Adjust ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123
- ❑ attach with cable strap to the shift cable ⇒ page 106
- ❑ as of 11.06 the attachment of the control cable in the shift housing Pos. 4 is modified




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**3 - Bush for selector cable**

- ❑ from 11.06

**4 - Shift housing**

**5 - Locking clips**

- ❑ do not damage cables when removing
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**6 - Screw**

- ❑ 3 units
- ❑ for cable support
- ❑ 20 Nm

**7 - Cable support**

- ❑ made out of plastic or metal

**8 - Grommet**

- ❑ Mounting of cable support to gearbox

**9 - Bushing**

**10 - Cable lock**

- ❑ Selector cable at relay lever
- ❑ After installing, set shift mechanism
  ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123
- ❑ Avoid mix-ups; the cable end-piece for gate selector cable on the relay lever and for the gear selector cable on the gearbox selector lever are different ⇒ page 105
- ❑ unlock ⇒ page 124 for setting the gearshift mechanism
- ❑ as of 06.07 it is fitted together with plastic relay lever ⇒ “1.16 Plastic relay lever”, page 106
- ❑ remove from plastic relay lever ⇒ “1.16 Plastic relay lever”, page 106
- ❑ press onto plastic relay lever ⇒ “1.16 Plastic relay lever”, page 106

**11 - Cable lock**

- ❑ Shift cable at gearbox shift lever
- ❑ After installing, set shift mechanism
  ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123
- ❑ Avoid mix-ups; the cable end-piece for gate selector cable on the relay lever and for the gear selector cable on the gearbox selector lever are different ⇒ page 105
- ❑ unlock ⇒ page 124 for setting the gearshift mechanism

**12 - Circlips**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ is not required for cable locks for selector cable at relay lever, if relay lever is made of plastic

**13 - Circlip**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ is not required. if the relay lever is made of plastic

**14 - Bushings**

- ❑ is not required. if the relay lever is made of plastic

**15 - Relay lever**

- ❑ Fitting position ⇒ page 106
- ❑ After installing, set shift mechanism
  ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123
- ❑ as of 06.07 the reversing level is plastic
- ❑ Removing and installing plastic relay lever together with cable lock
  ⇒ “1.16 Plastic relay lever”, page 106
- ❑ if the relay lever is made of plastic, neither of the bushings Pos. 14 are required

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### 16 - Sliding shoe

### 17 - Gearshift lever

- ❑ with balancing weight
- ❑ insert in such a way that the interrupted spacing of the teeth matches the gearshift shaft ⇒ page 106
- ❑ Fitting position ⇒ page 106
- ❑ after installing set shift mechanism
  ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123
- ❑ as of 06.06 the diameter of the fixing bolts is smaller 06.06 ⇒ page 105

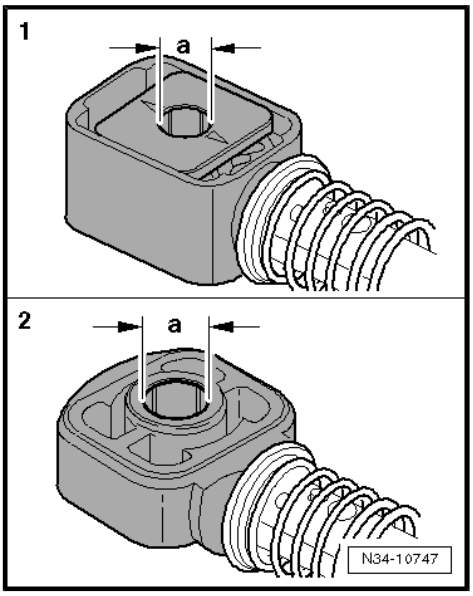
### 18 - Nut

- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 23 Nm

### Assign cable locks

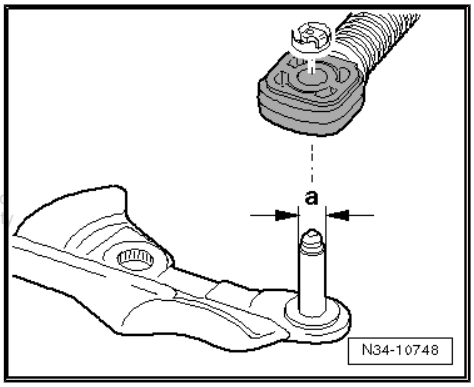
The holes in the cable end-pieces have different diameters.

| Cable lock for: | Dimension “a” |
|---|---|
| 1 - as of 06.06 - Shift cable at gearbox shift lever | 8.5 mm |
| 2 - until 05.06 - Shift cable at gearbox shift lever | 10 mm |
| 2 - Selector cable at relay lever | 8 mm |
| 2 - Selector cable at plastic relay lever<br>⇒ “1.16 Plastic relay lever”, page 106 | 10 mm |




### As of 06.06 the diameter of the fixing bolts is smaller

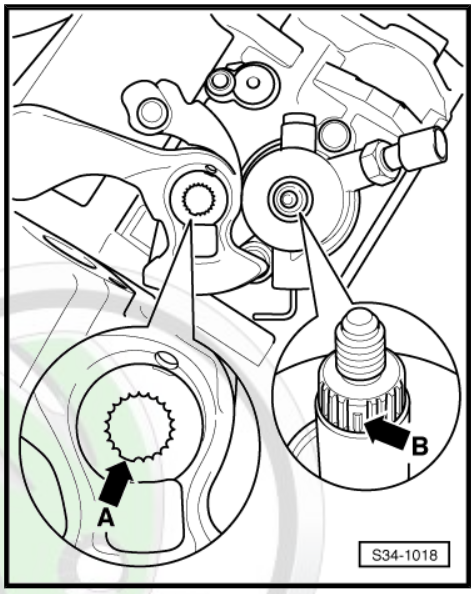
| Fixing bolts: | Dimension “a” |
|---|---|
| until 05.06 - Shift cable at gearbox shift lever | 10 mm |
| as of 06.06 - Shift cable at gearbox shift lever | 8.5 mm |




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**Install gearbox selector lever**

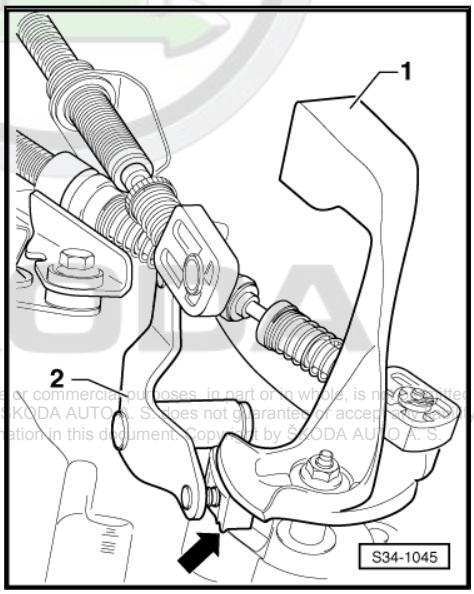
– When inserting the gearshift lever make sure that the gap between the teeth -arrow A- in the interrupted spacing matches the gearshift shaft -arrow B-.




**Fitting location of gearbox shift lever/relay lever**

1 - Gearbox shift lever with balancing weight

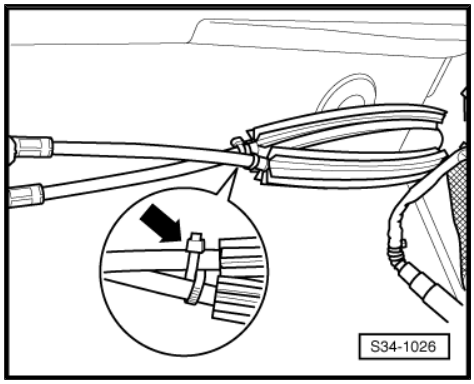
2 - Relay lever is inserted over the sliding shoe -arrow- into the sliding rail of the gearbox shift lever




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**Fitting position of cable strap for cable attachment**

– Cross cable strap -arrow-, in order to coil up the cables and fix as shown.




## 1.16 Plastic relay lever

**Special tools and workshop equipment required**

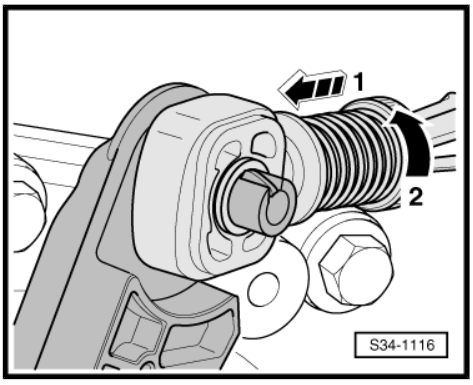
♦ Grease - G 000 450 02-

### Removing and installing plastic relay lever as of 06.07

– Pull forward the locking mechanism as far as the stop in -direction of arrow 1-, then lock by turning to the left in -direction of arrow 2-.

• In order to avoid damage to the selector cable. the cable lock must be separated from the selector cable before removal.

• The shifter shaft lever is in neutral position.

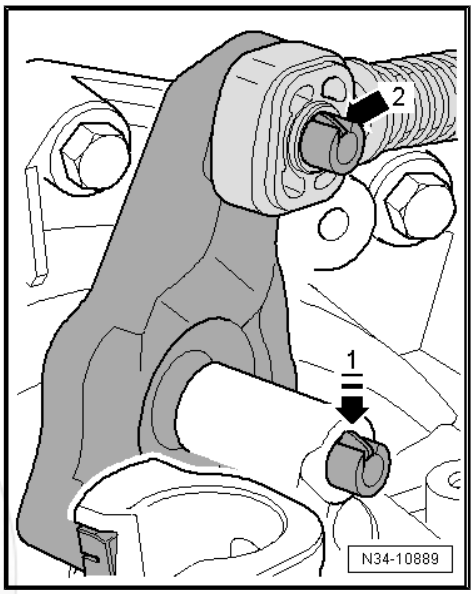



### The relay lever is secured with a catch -arrow 1- on the gearshift cover

– Carefully press the catch -arrow 1- up to the stop towards the bottom.

– Afterwards move relay lever in its bearing point back and forward (direction of operation). To do so, carefully pull out the cable lock.

• Only remove cable lock on removed relay lever ⇒ page 108




**Note**

*To install, grease bearing points and friction surfaces with grease - G 000 450 02- .*

– Press cable lock onto the relay lever ⇒ page 108

– Insert relay lever together with cable lock.

• The catch -arrow 1- secures the relay lever.

• The cable lock must be located behind the catch -arrow 2-.

### The relay lever is secured with a clip -arrow°1- on the gearshift cover

– Remove the clip -arrow 1- from the opening in the relay lever.

– Pull the relay lever out of its bearing point in the gearshift cover together with the cable lock.

• Only remove cable lock on removed relay lever ⇒ page 108




**Note**

*To install, grease bearing points and friction surfaces with grease - G 000 450 02-.*

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– Press cable lock onto the relay lever ⇒ page 108

– Insert relay lever together with cable lock.

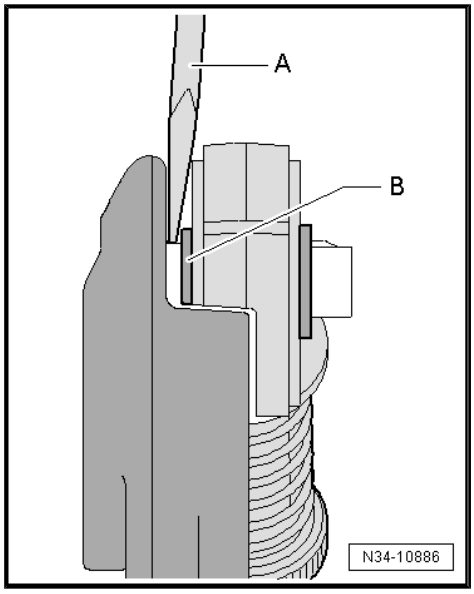
– Secure the relay lever with a clip -arrow 1-.

### Remove and install cable lock for selector cable from plastic relay lever

**Lever off cable lock for selector cable from plastic relay lever**

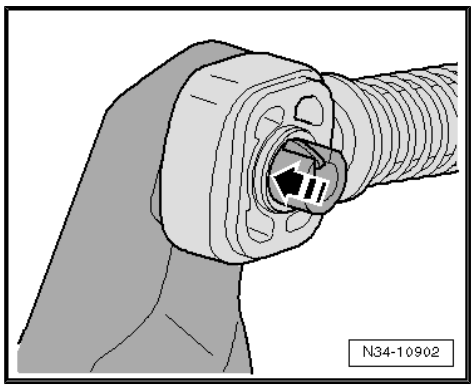
- Relay lever removed.

– Insert a flat-blade screwdriver -A- between bush -B- and relay lever.




**Press on cable lock**

- Relay lever removed.
- Cable end-piece may be pressed only onto bush -arrow-.
- Cable lock must move freely on relay lever.
- It must be located behind the catch ⇒ page 107 .




## 1.17 Removing and installing shift mechanism (Octavia II)

### 1.17.1 Removing

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**Special tools and workshop equipment required**

♦ Grease - G 000 450 02-

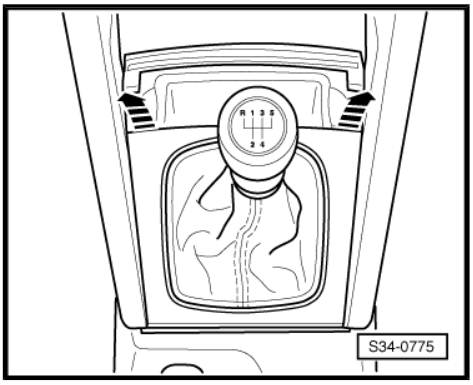
**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

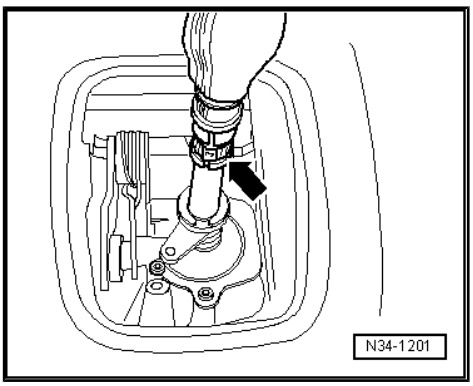
– Disconnect the battery-earth strap with the ignition off ⇒ Electrical System; Rep. gr. 27 .

– Remove air filter ⇒ Engine; Rep. gr. 23 .

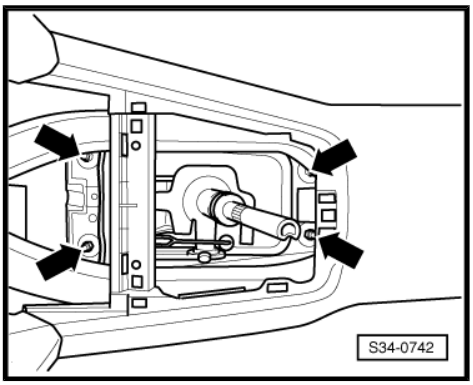
– Lever the collar upwards and out of centre console surround -arrows-.




– Open clamp -arrow- and pull off gearshift knob together with the collar.
– If present. detach the noise insulation.
– Removing ashtray ⇒ Body Work; Rep. gr. 68 .




– Unscrew nuts -arrows- attaching the shift housing.



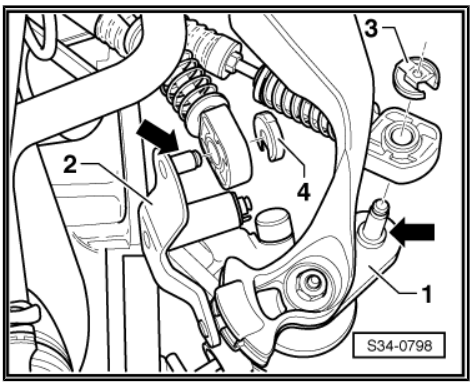

– Remove lock washer -3- for the shift cable from the shifter shaft lever -1-.

**Metal relay lever**

– Remove circlip -4- for selector cable from relay lever -2-.
– Remove selector cable and shift cable from the studs -arrows-.

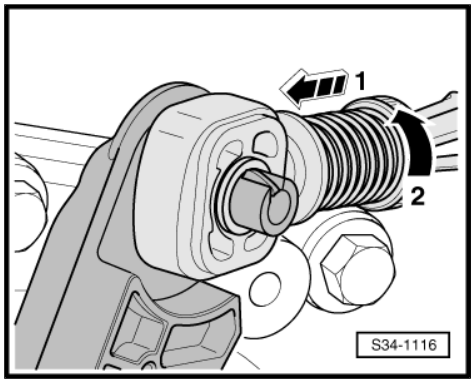
**Plastic relay lever**

– Pull gear selector cable off pin.
• In order to avoid damage to the selector cable. the cable lock must be separated from the selector cable before removal.



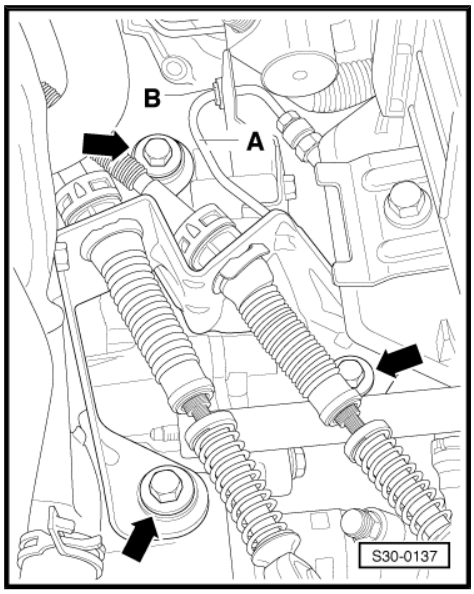

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– Pull forward the locking mechanism as far as the stop in -direction of arrow 1-, then lock by turning to the left in -direction of arrow 2-.
– Remove plastic relay lever together with the cable lock ⇒ “1.16 Plastic relay lever”, page 106 .

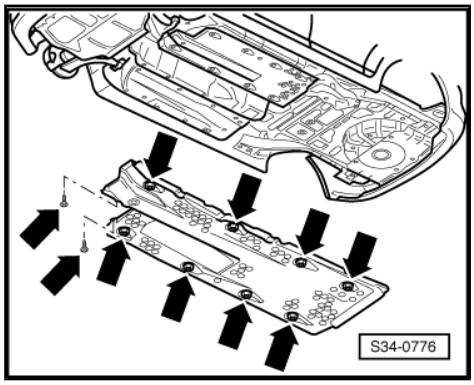



**Continued for all vehicles**

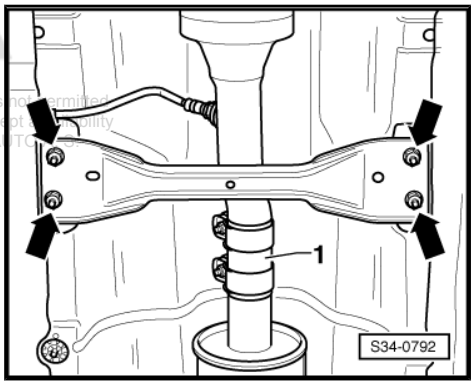
– Disconnect the Bowden cable support from gearbox -arrows-, if necessary first unclip hose line -A- at bracket -B-.
– If present, remove the sound dampening system ⇒ Body work; Rep. gr. 50 .




– Remove underbody cover on right and left -arrows-.
– Detach tunnel bridges below the exhaust system ⇒ Engine; Rep. gr. 26 .

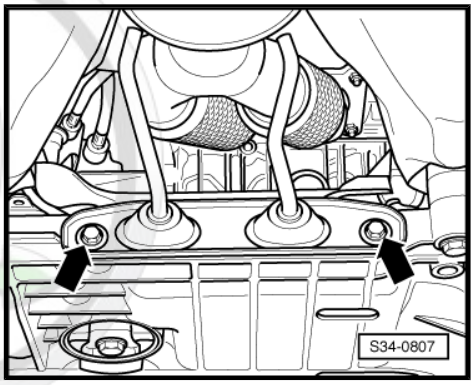



– Separate exhaust system at the double clamp -1-.

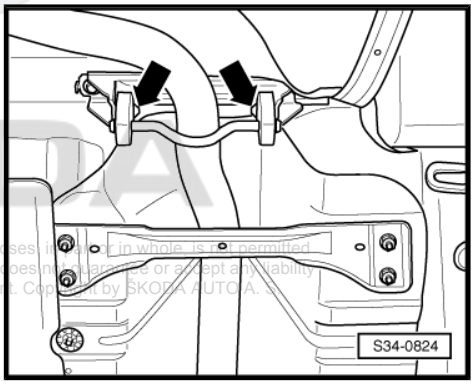



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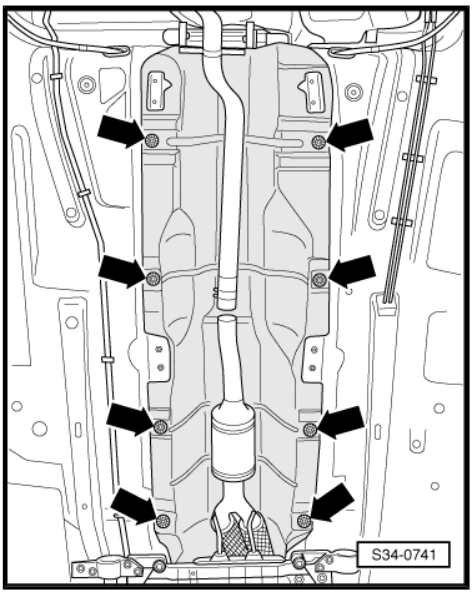
– Unbolt bracket for front silencer -arrows-.




– Unhook rear silencer from spring loops -arrows-.




– Clip off clips -arrows- and remove heat shield.
– Swivel shift housing down and remove with control cables.



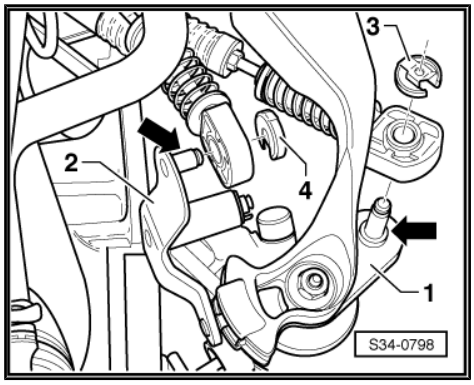

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## 1.17.2 Installing

Installation is performed in the reverse order, pay attention to the following points:

The holes in the cable locks have different diameters
⇒ page 105

– Apply a small quantity of grease - G 000 450 02- onto the studs -arrows- of the gearbox shift lever -1- and of the relay lever -2-.
– Always replace lock washers -3- and -4- after each removal ⇒ Electronic Catalogue of Original Parts .
– Secure the shift cable with the lock washer -3- and the selector cable with the lock washer -4- (for metal relay lever).

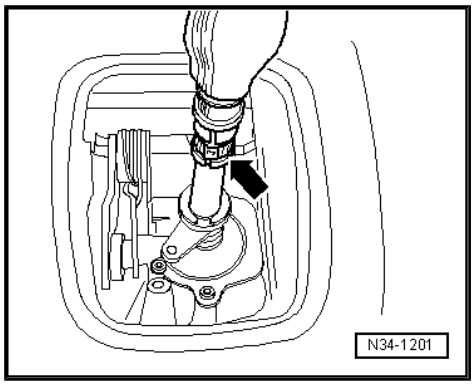



**Cable lock with plastic relay lever**

– Relay lever and cable lock must be installed together ⇒ “1.16 Plastic relay lever”, page 106 .
– Insert the selector cable into the cable lock.

**Continued for all gearshift mechanisms**

– Align shift housing parallel to vehicle body.
• The distance to the vehicle body must be the same on both sides.




– Replace clamp -arrow- ⇒ Electronic Catalogue of Original Parts .
– Assemble exhaust system free of stress and attach tunnel bridges ⇒ Engine; Rep. gr. 26 .
– Install the noise insulation ⇒ Body Work; Rep. gr. 50 .
– Installing ashtray ⇒ Body Work; Rep. gr. 68 .
– Setting the shift mechanism ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123 .
– Setting the shift mechanism ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123 .
– Install air filter ⇒ Engine; Rep. gr. 23 .

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**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Connect earth strap of battery while paying attention to the notes in the ⇒ Electrical System; Rep. gr. 27 .

**Tightening torque**

| Component | Nm |
|---|---|
| Shift housing to body | ⇒ “1.12 Summary of components - Gearshift mechanism as of 11.06”, page 93 |
| Cable support to gearbox | ⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103 |
| Underbody cover | ⇒ Body Work; Rep. gr. 50 |

## 1.18 Removing and installing shift mechanism (Superb II)

### 1.18.1 Removing

**Special tools and workshop equipment required**

- Release tool - T30098-
- Grease - G 000 450 02-

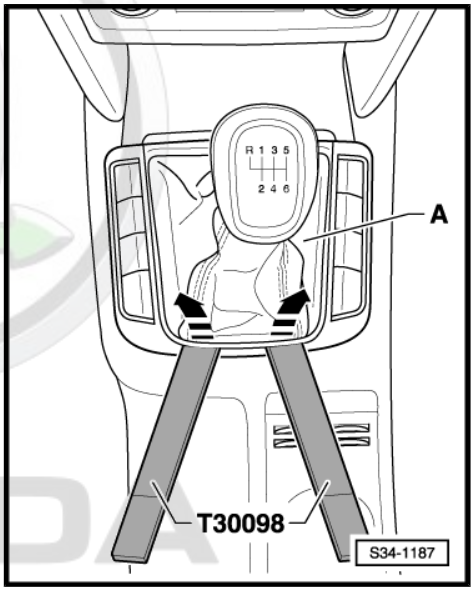
**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Disconnect the battery-earth strap with the ignition off ⇒ Electrical System; Rep. gr. 27 .

– Remove air filter ⇒ Engine; Rep. gr. 23 .

– Lever the collar -A- upwards and out of the centre console surround using the release tool - T30098- -arrows-.

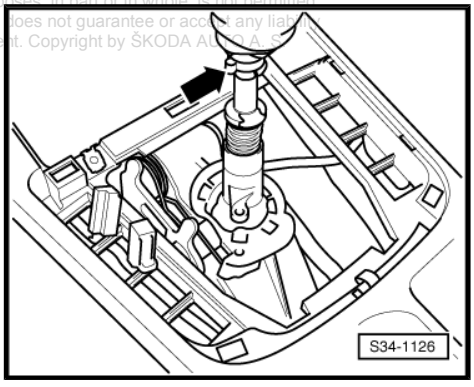



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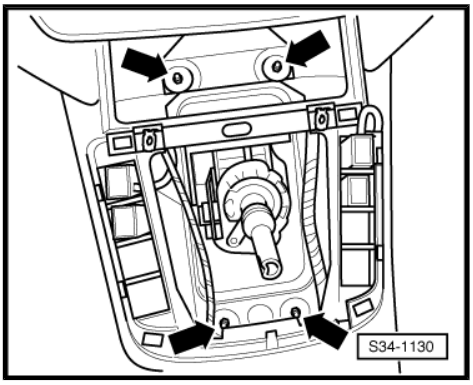
– Open clamp -arrow- and pull off gearshift knob together with the collar.

– If present. detach the noise insulation.

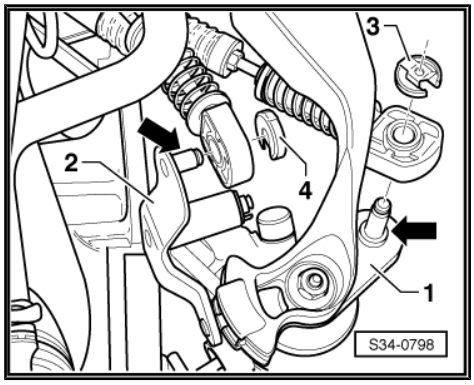
– Removing ashtray ⇒ Body Work; Rep. gr. 68 .




– Unscrew nuts -arrows- attaching the shift housing.



– Remove lock washer -3- for the shift cable from the shifter shaft lever -1-.
– Pull off shift cable from the stud -arrow-.




**Metal relay lever**

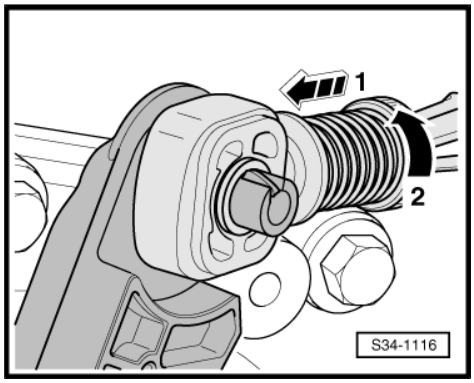
– Remove circlip -4- for selector cable from relay lever -2-.
– Pull off selector cable from the stud -arrow-.

**Plastic relay lever**

**Separate cable lock from selector cable**

- In order to avoid damage to the selector cable. the cable lock must be separated from the selector cable before removal.

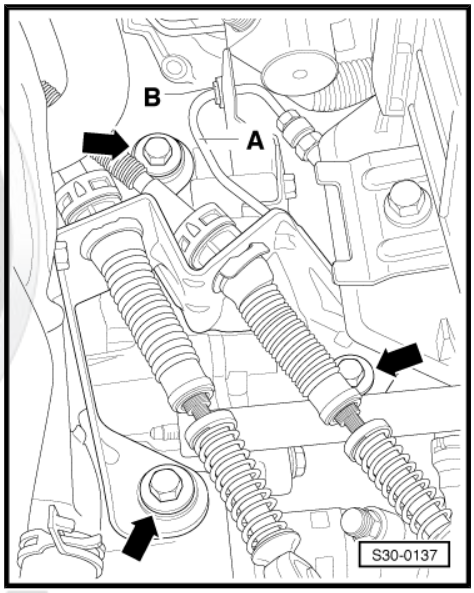
– Pull forward the locking mechanism as far as the stop in -direction of arrow 1-, then lock by turning to the left in -direction of arrow 2-.



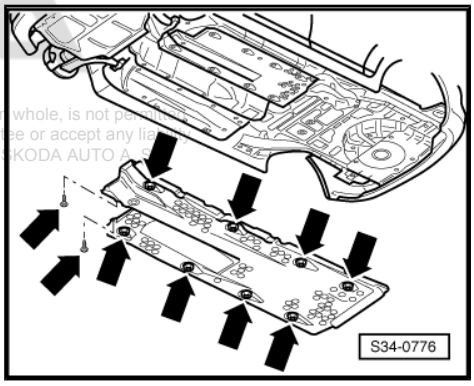

– Remove the plastic relay lever together with the cable lock ⇒ “1.16 Plastic relay lever”, page 106 .

**Continued for all vehicles**

– Disconnect the Bowden cable support from gearbox -arrows-, if necessary first unclip hose line -A- at bracket -B-.
– If present, remove the sound dampening system ⇒ Body work; Rep. gr. 50 .

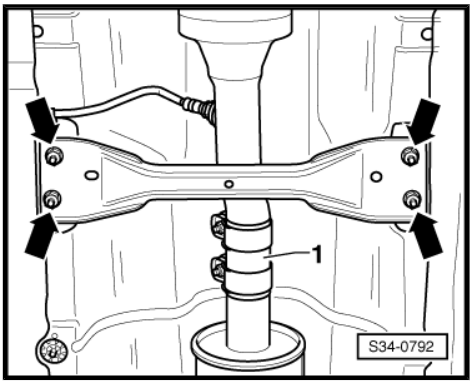



– Remove underbody cover on right and left -arrows-.
– Detach tunnel bridges below the exhaust system ⇒ Engine; Rep. gr. 26 .




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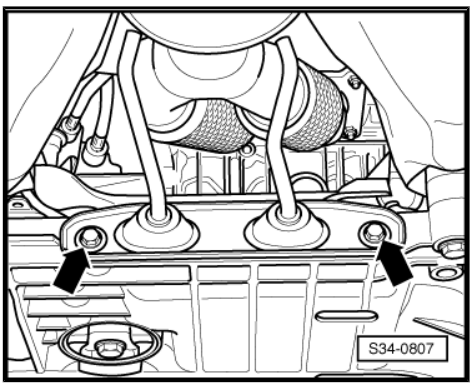
– Separate exhaust system at the double clamp -1-.
– Support the front exhaust pipe.



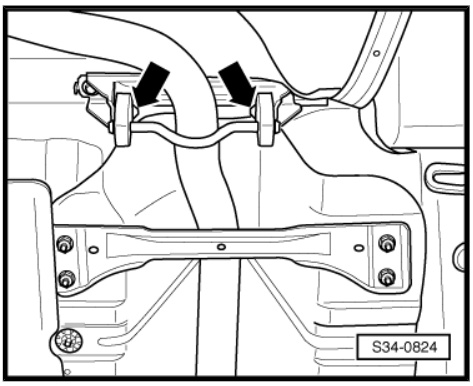

**Note**

*The decoupling elements in the exhaust pipe should not be bent by more than 10° - risk of damage.*

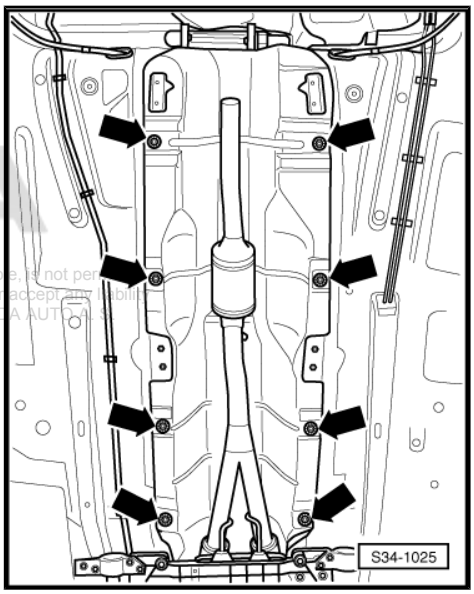
– Unscrew the hanger of the front exhaust system from the assembly carrier -arrows-.




– Unhook the rear silencer from the retaining straps -arrows- and remove the rear silencer.




– Clip off clips -arrows- and remove heat shield.
– Swivel shift housing down and remove with control cables.

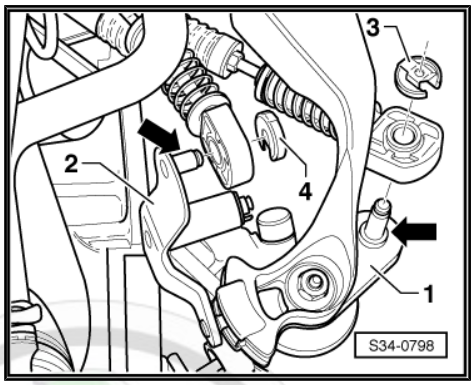



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## 1.18.2 Installing

Installation is performed in the reverse order, pay attention to the following points:

The holes in the cable locks have different diameters
⇒ page 105



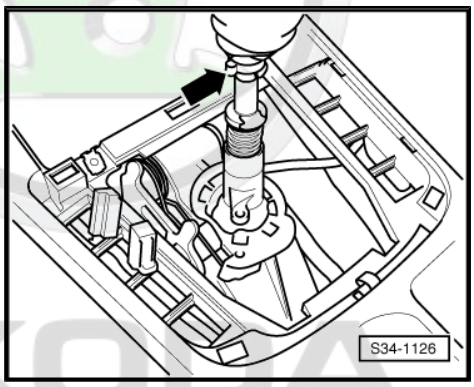

– Apply a small quantity of grease - G 000 450 02- onto the studs -arrows- of the gearbox shift lever -1- and of the relay lever -2-.
– Always replace lock washers -3- and -4- after each removal ⇒ Electronic Catalogue of Original Parts .
– Secure the shift cable with the lock washer -3- and secure the selector cable (for metal relay lever) with the lock washer -4-.

**Cable lock with plastic relay lever**

– Relay lever and cable lock must be installed together ⇒ “1.16 Plastic relay lever”, page 106 .
– Insert the selector cable into the cable lock.

**Continued for all gearshift mechanisms**

– Align shift housing parallel to vehicle body.
• The distance to the vehicle body must be the same on both sides.




– Replace clamp -arrow- ⇒ Electronic Catalogue of Original Parts .
– Assemble exhaust system free of stress and attach tunnel bridges ⇒ Engine; Rep. gr. 26 .
– Install the noise insulation ⇒ Body Work; Rep. gr. 50 .
– Installing ashtray ⇒ Body Work; Rep. gr. 68 .

Setting the shift mechanism
⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123 .

– Install air filter ⇒ Engine; Rep. gr. 23 .

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Connect earth strap of battery ⇒ Electrical System; Rep. gr. 27 .

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**Tightening torques**

| Component | Nm |
|---|---|
| Shift housing to body | ⇒ “1.12 Summary of components - Gearshift mechanism as of 11.06”, page 93 |
| Cable support to gearbox | ⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103 |
| Underbody cover | ⇒ Body Work; Rep. gr. 50 |

# 1.19 Removing and installing shift mechanism (Yeti)

## 1.19.1 Removing

**Special tools and workshop equipment required**

- Release tool - T30098-
- Grease - G 000 450 02-

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

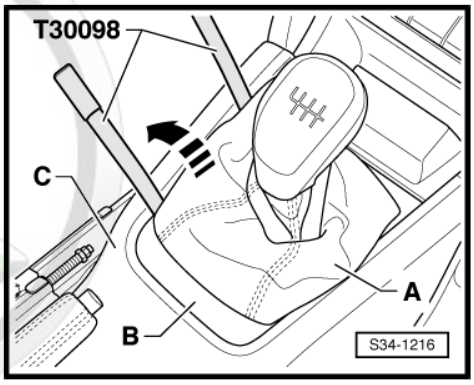
– Disconnect the battery-earth strap with the ignition off ⇒ Electrical System; Rep. gr. 27 .

– Remove air filter ⇒ Engine; Rep. gr. 23 .

– Remove battery and battery tray ⇒ Electrical System; Rep. gr. 27 .

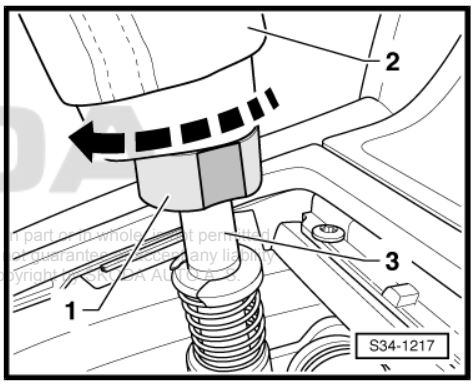
– Lever the collar -A- together with the surround -B- off the centre console -C- using the release tool - T30098- -direction of arrow-.

– Pull collar upwards, inside out over gear knob.



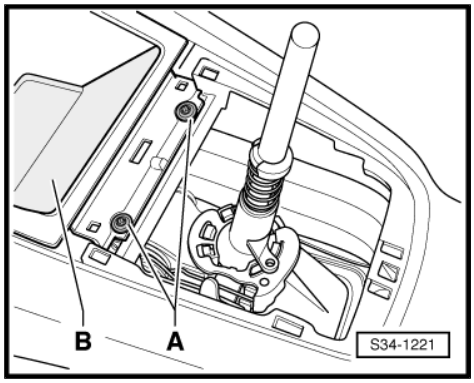

– Turn locking mechanism -1- 45° to the right -direction of arrow-.

– Pull off the gearshift knob together with the collar -2- from the shift lever -3-.

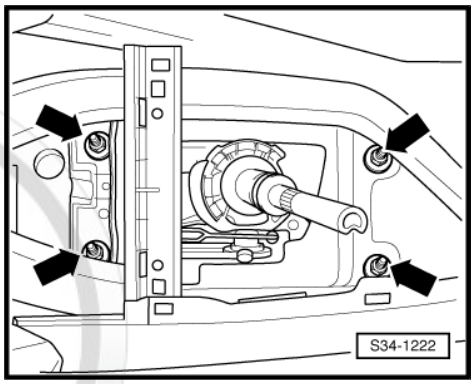



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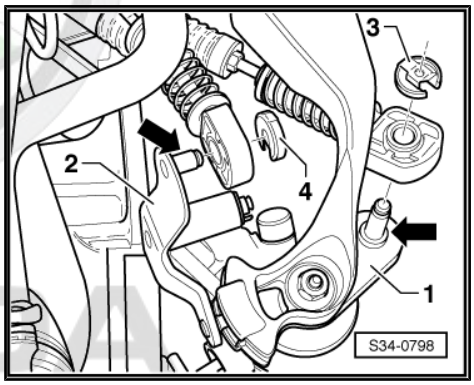
– Release screws -A- and remove ashtray or storage compartment -B- ⇒ Body Work; Rep. gr. 68 .



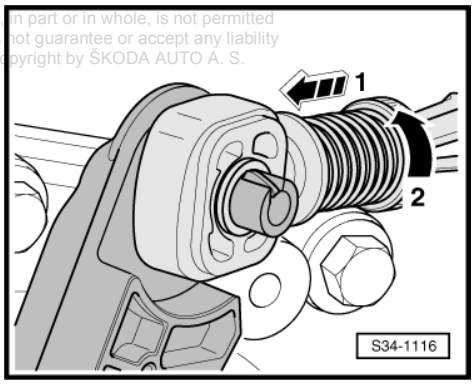

– Unscrew nuts -arrows- attaching the shift housing.




– Remove lock washer -3- for the shift cable from the shifter shaft lever -1-.
– Pull off the shift cable from the stud.
• In order to avoid damage to the selector cable. the cable lock must be separated from the selector cable before removal.

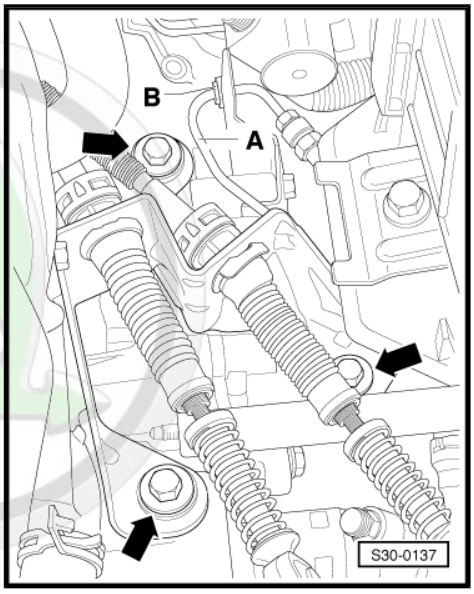



– Pull forward the locking mechanism as far as the stop in -direction of arrow 1-, then lock by turning to the left in -direction of arrow 2-.
– Remove the plastic relay lever together with the cable lock ⇒ “1.16 Plastic relay lever”, page 106 .

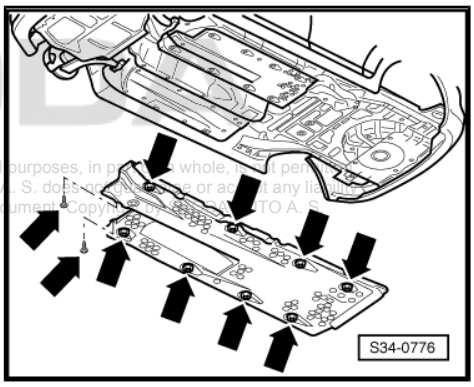



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– Disconnect the Bowden cable support from gearbox -arrows-, if necessary first unclip hose line -A- at bracket -B-.
– Remove the sound dampening system ⇒ Body Work; Rep. gr. 50 .

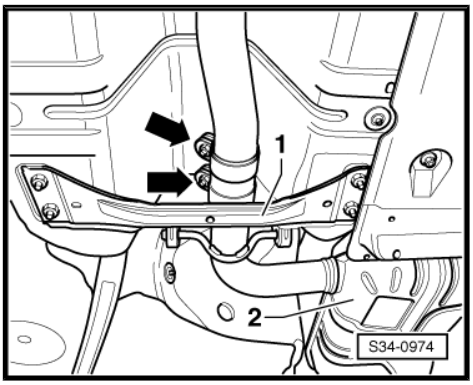



– Remove underbody cover on right and left -arrows-.




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– Detach the tunnel bridge -1- below the exhaust system ⇒ Engine; Rep. gr. 26 .
– Separate exhaust system at the clamping sleeve -arrows-.
– Support the front exhaust pipe.




**Note**

*The decoupling elements in the exhaust pipe should not be bent by more than 10° - risk of damage.*

– Unhook the rear silencer -2- from the retaining straps and remove the rear silencer.
– If necessary, remove pre-exhaust pipe ⇒ Engine; Rep. gr. 26 .
– Remove the heat shield below the shift housing.
– Swivel shift housing down and remove with control cables.

## 1.19.2 Installing

Installation is performed in the reverse order, pay attention to the following points:

– Apply a small quantity of grease - G 000 450 02- onto the stud of the relay lever.

The holes in the cable end-pieces have different diameters.

Assign cable locks ⇒ page 105

**The relay lever is secured with a clip -arrow 1- in the cover**

– Insert relay lever together with cable lock -arrow 2-.




**The relay lever is secured with a catch -arrow 1- in the cover**

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**Note**

*To install, grease bearing points and friction surfaces with grease - G 000 450 02- .*

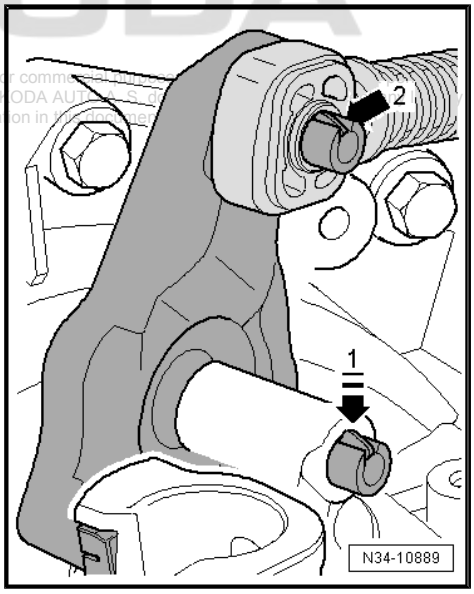
– Insert relay lever together with cable lock -arrow 2-.

• The catch -arrow 1- secures the relay lever.

– Insert the selector cable into the cable lock.

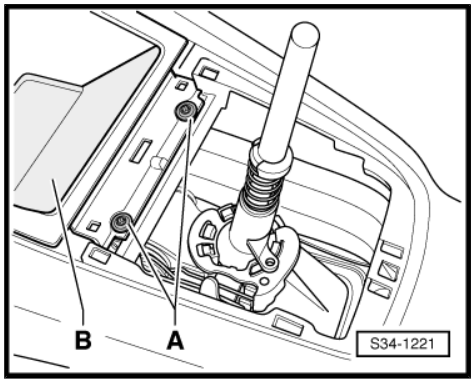
– Align shift housing parallel to vehicle body.

• The distance to the vehicle body must be the same on both sides.

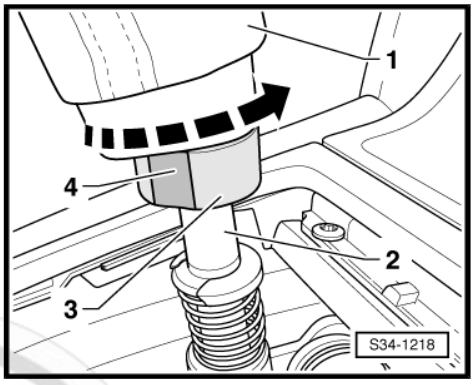



– Install ashtray or storage compartment -B- and tighten the screws -A- ⇒ Body Work; Rep. gr. 68 .

– Setting the shift mechanism ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123 .



– Turn collar -1- inside out.
– Push the gearshift knob together with the collar -1- as far as the stop onto the shift lever -2-.
– Turn locking mechanism -1- 45° to the left -direction of arrow-. While doing so, the surface -4- must point to the driver or front passenger seat.
– Assemble exhaust system free of stress and attach tunnel bridge ⇒ Engine; Rep. gr. 26 .
– Install the noise insulation ⇒ Body Work; Rep. gr. 50 .
– Install air filter ⇒ Engine; Rep. gr. 23 .




**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Connect earth strap of battery while paying attention to the notes in the ⇒ Electrical System; Rep. gr. 27 .

**Tightening torques**

| Component | Nm |
|---|---|
| Shift housing to body | ⇒ “1.12 Summary of components - Gearshift mechanism as of 11.06”, page 93 |
| Cable support to gearbox | ⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103 |
| Underbody cover | ⇒ Body Work; Rep. gr. 50 |

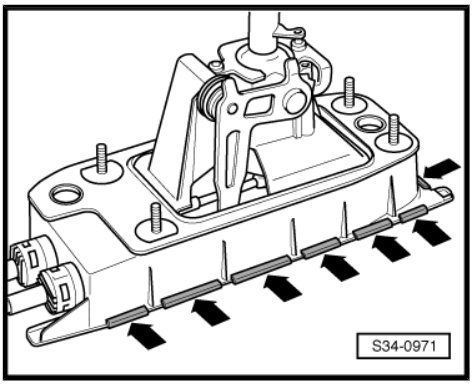
## 1.20 Removing and installing shift cable and selector cable

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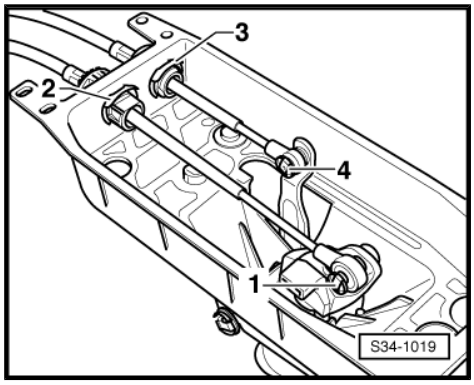
### 1.20.1 Removing

– Remove gearshift mechanism (Octavia II) ⇒ “1.17 Removing and installing shift mechanism (Octavia II)”, page 108 .
– Remove gearshift mechanism (Superb II) ⇒ “1.18 Removing and installing shift mechanism (Superb II)”, page 112 .
– Remove gearshift mechanism (Yeti) ⇒ “1.19 Removing and installing shift mechanism (Yeti)”, page 117 .
– Bend up tabs -arrows- of cover for the shift mechanism using a screwdriver and remove cover.
– Remove gasket ring.

**Vehicles up to 10.06**

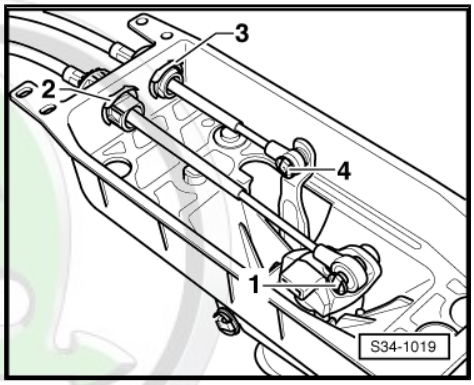


– Remove circlips -1,2,3,4- and remove shift cable and selector cable from shift housing.




**Vehicles as of 11.06**

– Remove lock washers -2 and 3- (lock washers -1 and 4- are no longer available), selector cable and shift cable must be levered off from the gearshift lever or relay lever e.g. with a screwdriver.




**Continued for all vehicles**

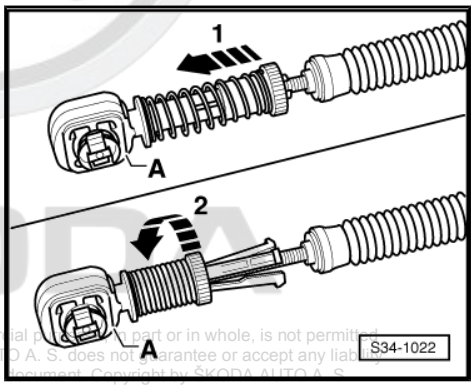
– Remove shift cable and selector cable from shift housing.

Unlock catches -A- for shift cable and selector cable as follows:

– Slide sliding sleeve forwards up to the stop -arrow 1-.

– Turn sliding sleeve to the right up to the stop -arrow 2- until it locks in place.

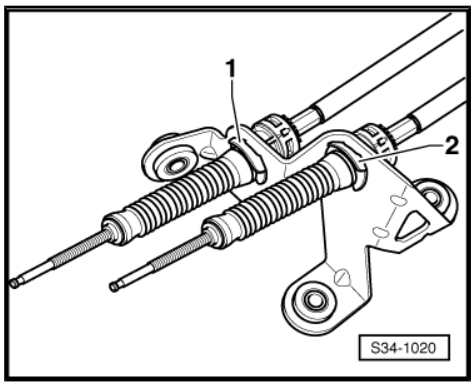
– Remove the catches from the cables.




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– Remove circlips -1- and -2-.

– Remove the cable support from the cables.



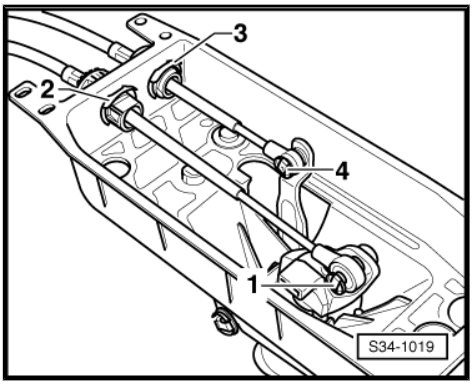

## 1.20.2 Installing

Installation is performed in the reverse order, pay attention to the following points:

**Vehicles up to 10.06**

– Attach shift cable and selector cable to shift housing with lock washers -2 and 3-.

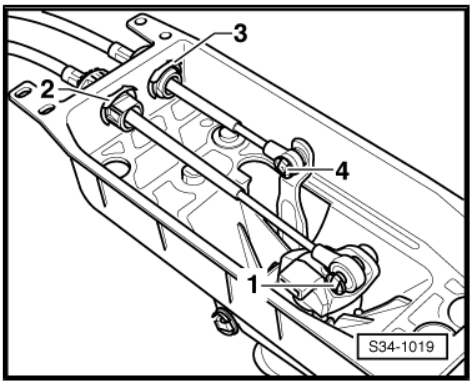
– Fasten shift cable and selector cable onto gearshift lever and relay lever in shift housing with lock washers -1 and 4-.




**Vehicles as of 11.06**

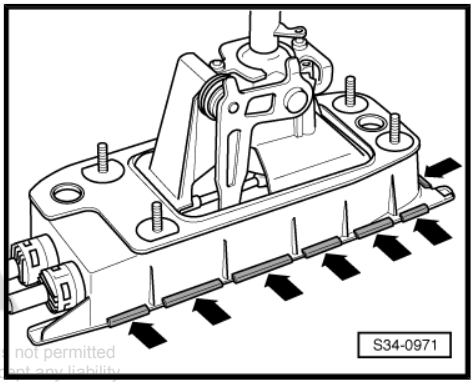
– Attach shift cable and selector cable to shift housing with lock washers -2 and 3-.

– Press shift cable and selector cable onto shift lever and selector lever into shift housing (lock washers -1 and 4- are no longer available).




**Continued for all vehicles**

– Install gasket and attach cover for shift mechanism by bending up the tabs -arrows-.




– Install gearshift mechanism (Octavia II) ⇒ “1.17 Removing and installing shift mechanism (Octavia II)”, page 108 .

– Install gearshift mechanism (Superb II) ⇒ “1.18 Removing and installing shift mechanism (Superb II)”, page 112 .

– Install gearshift mechanism (Yeti) ⇒ “1.19 Removing and installing shift mechanism (Yeti)”, page 117 .

– Setting the clutch control (Octavia II, Superb II and Yeti) ⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123 .

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## 1.21 Setting the clutch control (Octavia II, Superb II and Yeti)

**Special tools and workshop equipment required**

- Rig pin - T10027A-
- Release tool - T30098-

**Note**

*The following points are essential to ensure correct adjustment of selector mechanism:*

- Gearbox, clutch and clutch control in perfect condition
- Shift mechanism operates freely

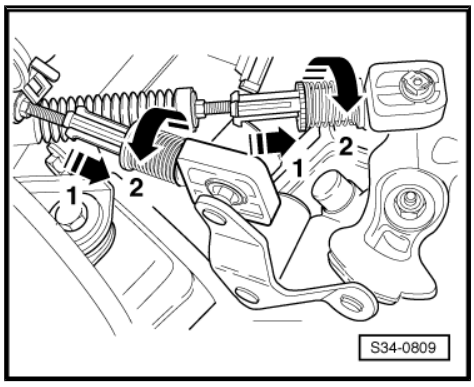
- Operating and transmission elements of the shift mechanism are in perfect condition
- Gearbox in Neutral

– Remove air filter ⇒ Engine; Rep. gr. 23 .

Unlock cable locks for shift cable and selector cable as follows:

– Slide sliding sleeves at shift cable and selector cable forwards up to the stop -arrows 1-.

– Turn the sliding sleeves in direction of the -arrows 2- as far as the stop until they lock in place.



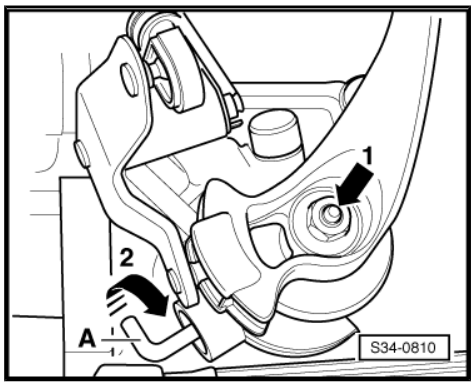

**Note**

*The cables can be moved in the catches.*

- Gearbox must be in neutral.

Lock the gearshift shaft as follows:

– Push down the gearshift lever in the direction of arrow -1- into the gate of the 1st/2nd gear. Turn the angle lever -A- in -direction of arrow 2-, until it locks.




This locks the gearshift shaft and can no longer be moved.

– Make sure that the shift cable and selector cable sit stress-free in the catches.

**Vehicles Octavia II**

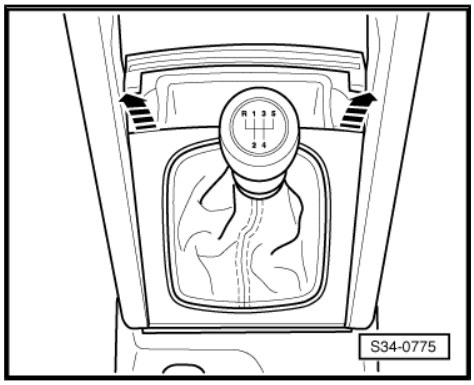
– Open the ashtray.

– Carefully lever off the cover from the centre console -arrows-.

– Pull the cover upwards over the gearshift knob.

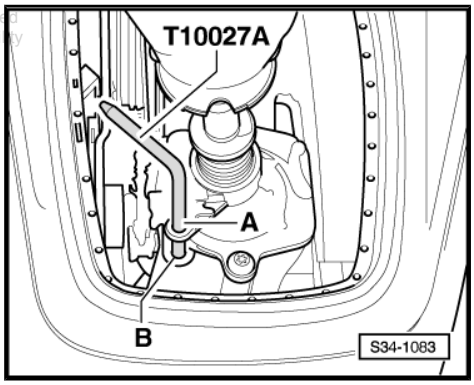
– Guide shift lever in neutral position to the left into the 1st/2nd gear gate.

– Partly pull off the noise cover aside.




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– Lock shift lever with rig pin -T10027A- .




**Note**

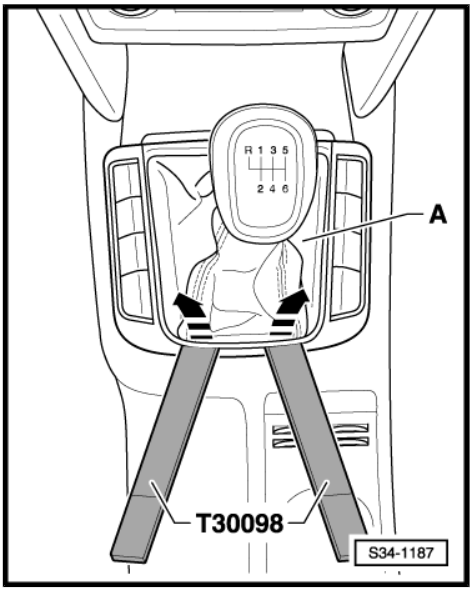
*The illustration shows the shift lever with the noise covers removed.*

**Superb II vehicles**

– Lever the collar -A- upwards and out of the centre console surround using the release tool - T30098- -arrows-.
– If present. remove the noise insulation.

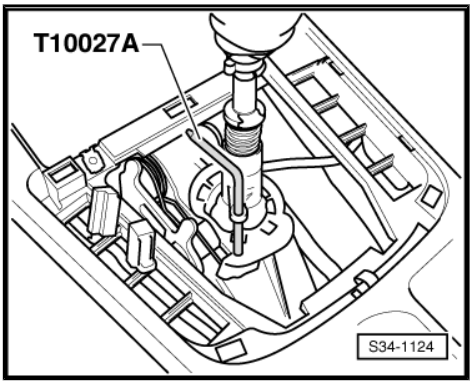
Now fix the gearshift lever as follows:

– Engage neutral position on gearshift lever.




– Insert rig pin - T10027A- into the holes.

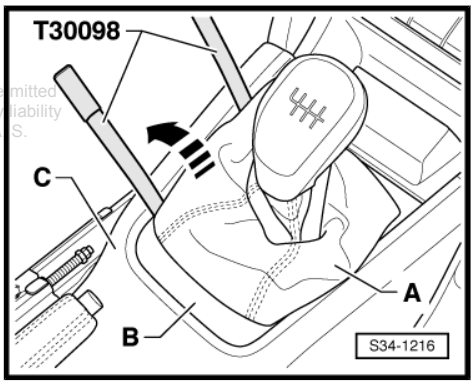
**Yeti vehicles**



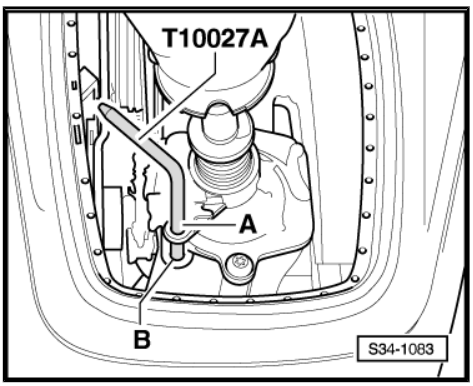

– Lever the collar -A- together with the surround -B- off the centre console -C- using the release tool - T30098- -direction of arrow-.
– Pull collar upwards, inside out over gear knob.

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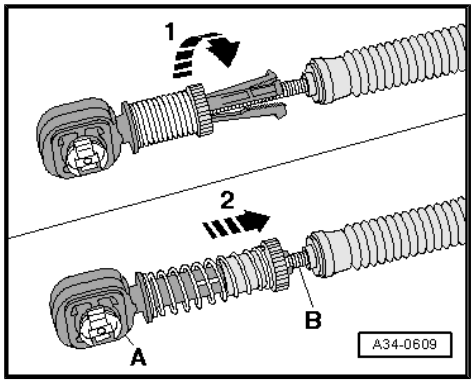
Now fix the gearshift lever as follows:




– Insert the rig pin - T10027A- .



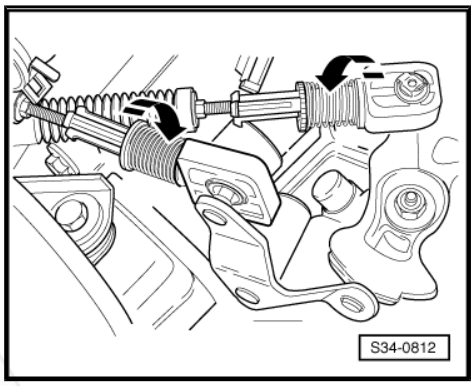
– Ensure that the selector and shift cable -B- are pushed free of tension into the catches -A-.




**Continued for all vehicles**

– Turn sliding sleeve at shift cable and selector cable in -direction of the arrow- up to the stop.

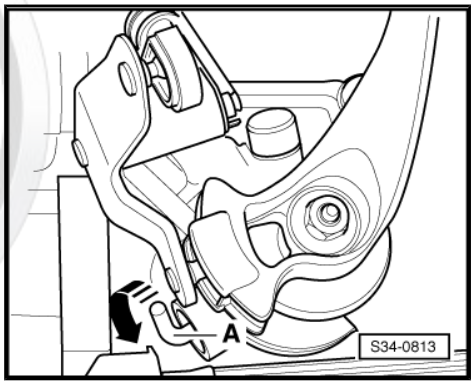
The spring pushes the sliding sleeves into the initial position.




**Note**

*The shift cable is now adjusted.*

– Turn angle lever -A- back to the initial position (in -direction of arrow-).
– Pull locking pin -T10027A- out of the shift mechanism.
– Install shift lever collar.
– Install air filter ⇒ Engine; Rep. gr. 23 .




## 1.21.1 Function

- Selector lever must be in neutral position in the gate for 3rd/ 4th gear.

– Depress clutch.
– Select all gears several times. Pay particular attention to proper operation of the reverse gear lock.

If a gear catches when engaged again, set the shift mechanism once again
⇒ “1.21 Setting the clutch control (Octavia II, Superb II and Yeti)”, page 123 .

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# 2 Removing and installing the gearbox

**Octavia II**

Removing the gearbox
⇒ “2.1 Removing gearbox (Octavia II)”, page 127 .

Installing the gearbox
⇒ “2.2 Install gearbox (Octavia II)”, page 134 .

Tightening torques ⇒ “2.2.1 Tightening torques”, page 136 .

**Superb II**

Removing the gearbox
⇒ “2.3 Remove gearbox (Superb II)”, page 136 .

Installing the gearbox
⇒ “2.4 Install gearbox (Superb II)”, page 143 .

Tightening torques ⇒ “2.4.1 Tightening torques”, page 144 .

**Yeti**

Removing the gearbox
⇒ “2.5 Removing gearbox (Yeti)”, page 145 .

Installing the gearbox
⇒ “2.6 Installing gearbox (Yeti)”, page 151 .

Tightening torques ⇒ “2.6.1 Tightening torques”, page 153 .

## 2.1 Removing gearbox (Octavia II)

**Special tools and workshop equipment required**

- Supporting device - T30099-
- Surface - T30099/1-
- Hook for MP9-200 and T30099 - MP9-200/10 (10-222A/10)-
- Adapter - T40091/3-
- Adapter - MP9-200/18-
- Insert base - 10-222A/31-
- Surface - T30119-
- Gearbox mount - 3282-
- Tensioning strap - T10038-
- Adjusting plate - 3282/39-
- Engine/gearbox jack (e.g. - V.A.G 1383A- )
- Transmission - trailer coupling - MP3-478 (3336)-
- Support device for engine - MP3-470 (3300 A)-
- Alignment rail - MP3-457/2-
- Grease for splines - G 000 100-

– Remove engine cover ⇒ Engine.; Rep. gr. 10

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**Note**

- *All cable straps that are detached or cut when removing should be attached again in the same place when installing.*
- *After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

– Disconnect the battery-earth strap with the ignition off ⇒ Electrical System; Rep. gr. 27 .

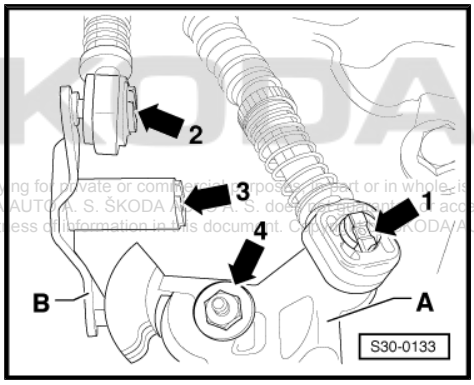
– Remove the cooling water tank cover ⇒ Body Work; Rep. gr. 66 .

– Remove air filter ⇒ Engine; Rep. gr. 23 .

– Remove battery and battery tray ⇒ Electrical System; Rep. gr. 27 .

– Remove lock washer -arrow 1- for shift cable from gearbox shift lever -A-.

– Pull gear selector cable off pin.




**Metal relay lever**

– Remove circlip -arrow 2- for selector cable from relay lever -B-.

– Pull off the selector cable from the stud.

– Detach circlip -arrow 3- from the relay lever -B- and remove relay lever.

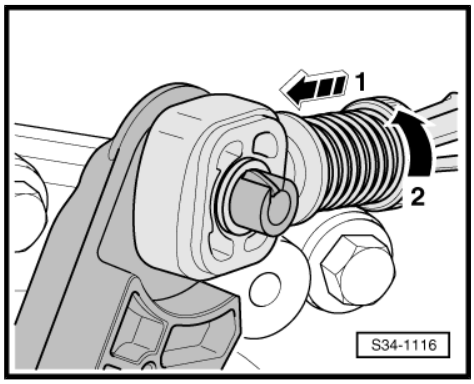
**Note**

*Always replace circlips ⇒ Electronic Catalogue of Original Parts*

**Plastic relay lever**

- In order to avoid damage to the selector cable. the cable lock must be separated from the selector cable before removal.

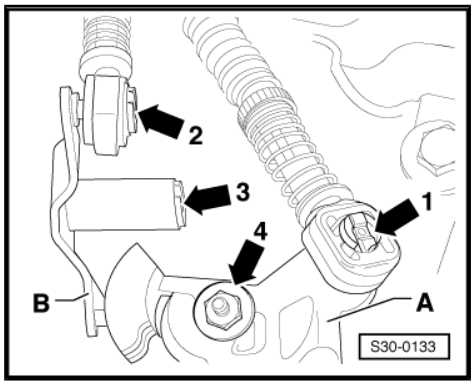
– Pull forward the locking mechanism as far as the stop in -direction of arrow 1-, then lock by turning to the left in -direction of arrow 2-.




– Remove relay lever together with cable lock ⇒ “1.16 Plastic relay lever”, page 106 .

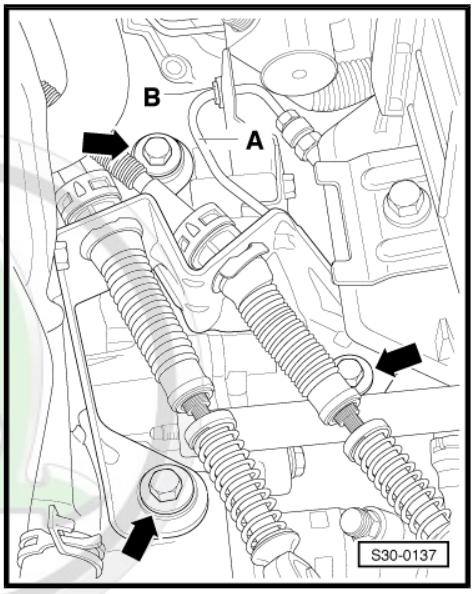
**Continued for all vehicles:**

– Remove the gearshift lever -A-, for this step unscrew nut -arrow 4-.

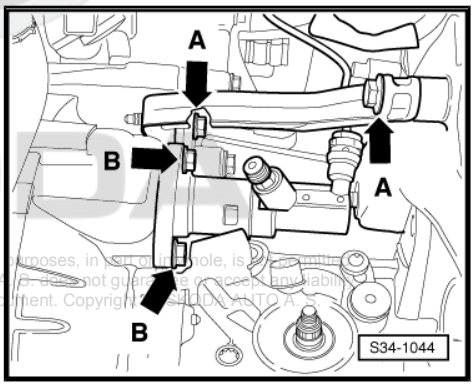



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– Disconnect the Bowden cable support from gearbox -arrows-.
– Tie up shift cable and selector cable.
– Remove bracket -B- from the gearbox and pull off from the tube-hose line -A-.




– Remove the support -arrows A-.
– Remove the slave cylinder -arrows B- and lay aside, secure with wire, do not open the line system.

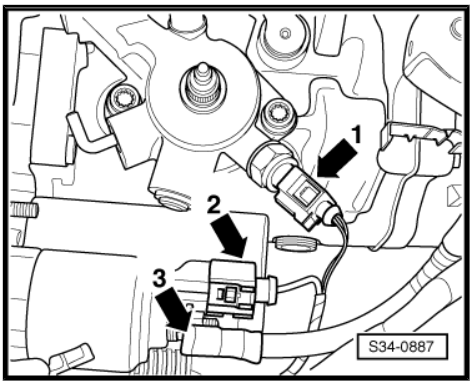



**Note**

*Do not depress the clutch pedal.*

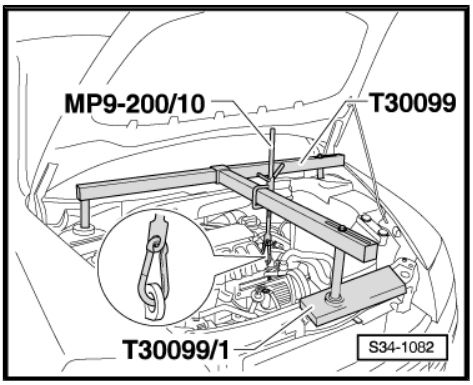
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– Disconnect plug -arrow 1- from reversing light switch - F4- .
– Remove connector -arrow 2- and cable -arrow 3- from the starter.
– Free the pipes
– Remove top securing screws at starter.
– Remove engine/gearbox connecting screws at the top.
– If hose and cable connections are located in the area of the lifting eye at the engine, these must now be removed.

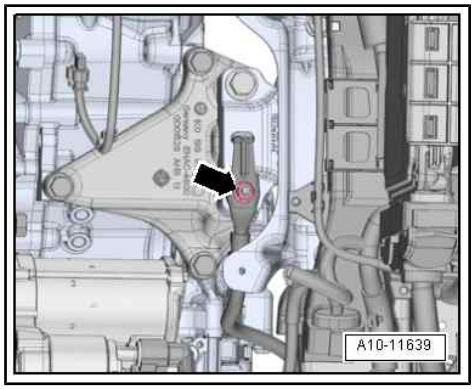



**For vehicles Octavia II**

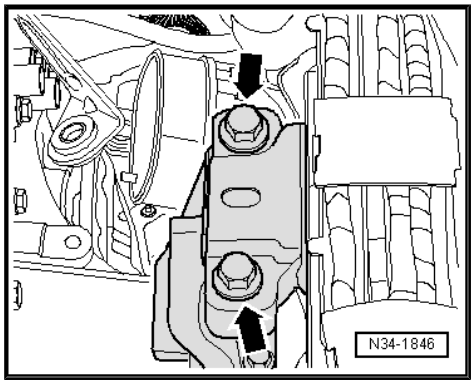
– Fit supporting device - T30099- .



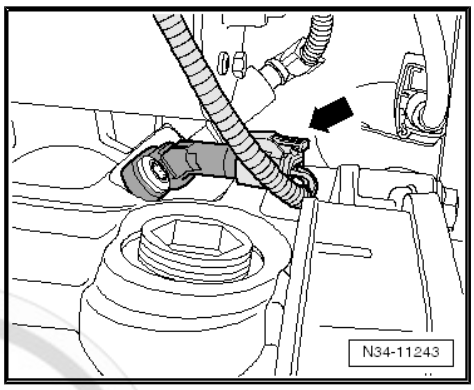
– Unscrew nut -arrow- and remove earth strap from gearbox mount, if present.
– Slightly pre-tension the engine/gearbox unit via the spindles, do not raise.



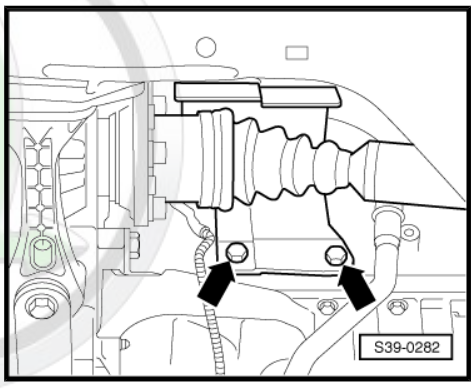

– Remove fixing screws -arrows- for engine and gearbox mount from above.
– Loosen the front left wheel bolts.
– Raise vehicle:
♦ ⇒ Maintenance ; Booklet Octavia II .
– Fit the left front wheel ⇒ Chassis; Rep. gr. 44 .
– Remove noise insulation ⇒ Body Work; Rep. gr. 50 and front left wheelhouse liner ⇒ Body Work; Rep. gr. 66 .




– Transmission for vehicles with start-stop system: pull plug -arrow- from Gearbox neutral position sender - G701- .
– Remove starter ⇒ Electrical System; Rep. gr. 27 .




– If applicable remove cap for drive shaft from the engine -arrows-.

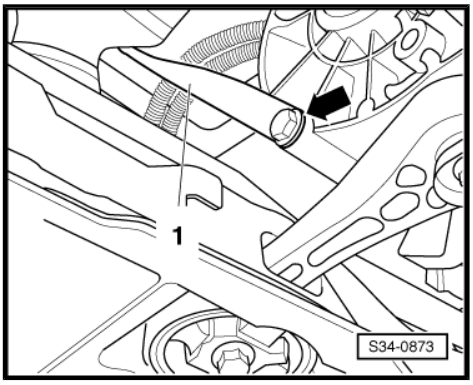



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– Remove support (if present) -1- for exhaust system from gearbox -arrow- ⇒ Engine; Rep. gr. 26 .

– Separate exhaust system at the clamping sleeve and remove bracket for the exhaust system from the assembly carrier ⇒ Engine; Rep. gr. 26 .

– Tie up pre-exhaust pipe.



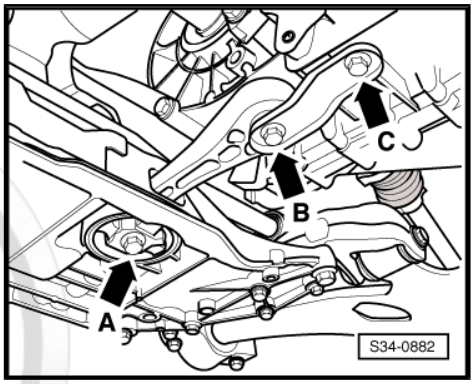

**Note**

*The decoupling elements in the exhaust pipe should not be bent by more than 10° - risk of damage.*

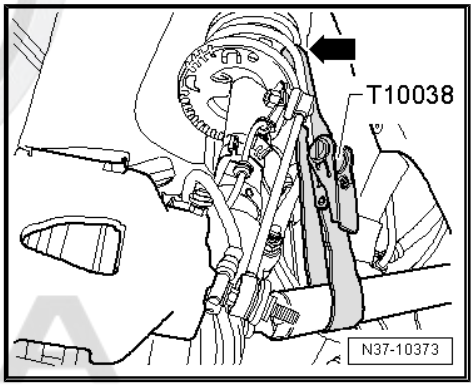
– Pull off air guide hose ⇒ Engine; Rep. gr. 23 .

– Remove pendulum support -arrows A, B and C-.

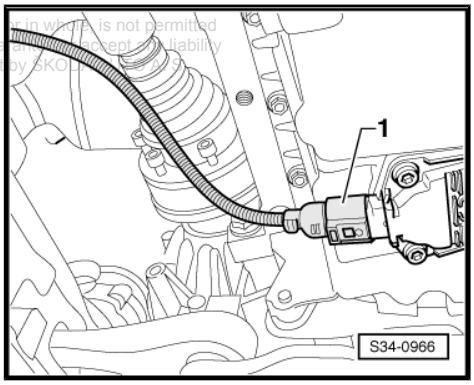
– Remove drive shafts from flange shafts ⇒ Chassis; Rep. gr. 40 .




– Secure the drive shaft e.g. with the tensioning strap - T10038 - (while doing so do not damage the surface protection).

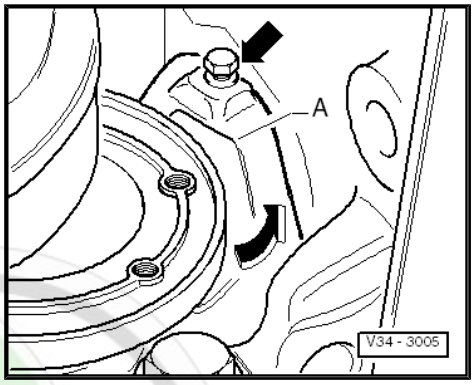



– Disconnect plug -1- from oil level and oil temperature sender - G266- .

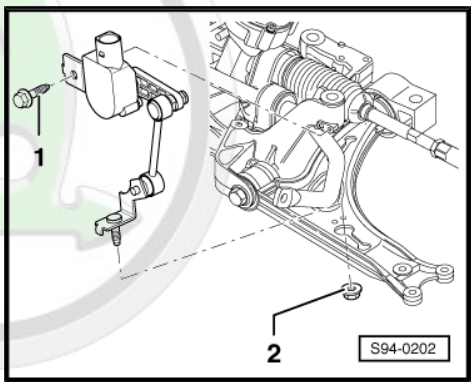



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– Remove small cover plate -A- for flywheel (if present).




– Disconnect the plug connection on the vehicle level sensor (if present).
– Unscrew nut -2-.
– Release screw -1- and remove the sender.
– Fix the assembly carrier before removing ⇒ Chassis; Rep. gr. 40 .
– Remove the assembly carrier with console without steering gear. left track control arm and coupling rod ⇒ Chassis; Rep. gr. 40 .
– Insert gearbox mount - 3282 - into engine/gearbox jack , e.g. -V.A.G 1383 A- .

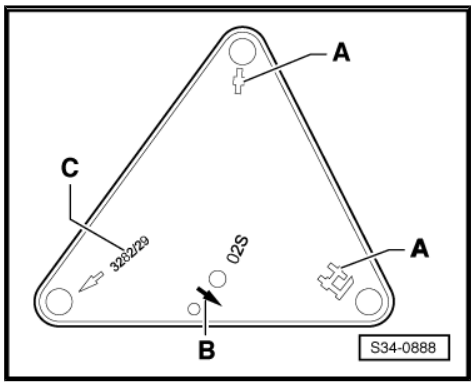



Complete engine/gearbox jack with gearbox mount - 3282- and adjusting plate - 3282/39- as follows:

– Position adjusting plate - 3282/39- on gearbox mount - 3282- ( adjusting plate fits in only one position).
– Align arms of the gearbox mount with the holes in the adjusting plate .

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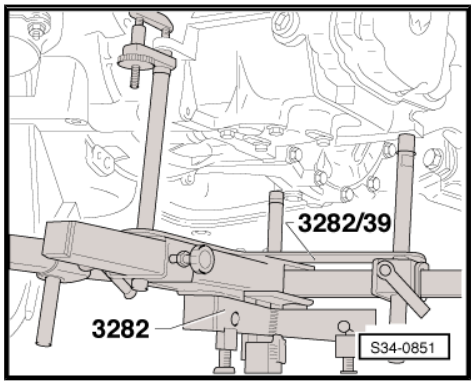
– Screw in the mounting elements -A- and -C- as shown on adjusting plate .
– Position engine/gearbox jack below vehicle, arrow -B- on adjusting plate points in the direction of travel/vehicle.



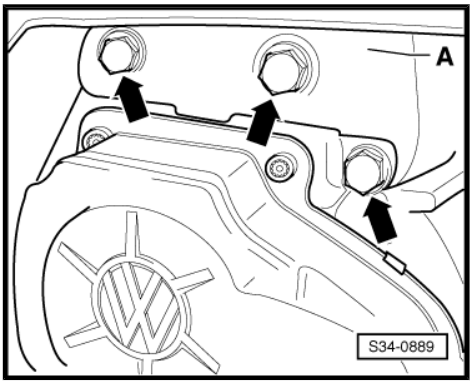

– Align adjusting plate parallel to the gearbox and lock securing elements of the support at the gearbox.
– Carefully lower engine with gearbox slightly.

**Note**

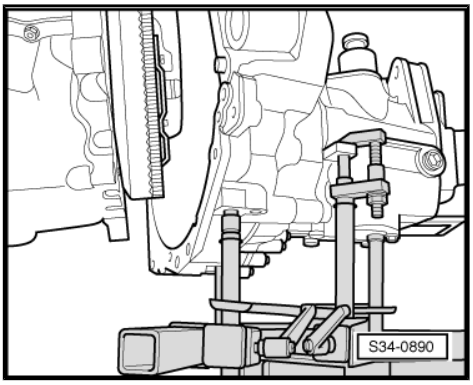
*Observe all lines when lowering the gearbox.*



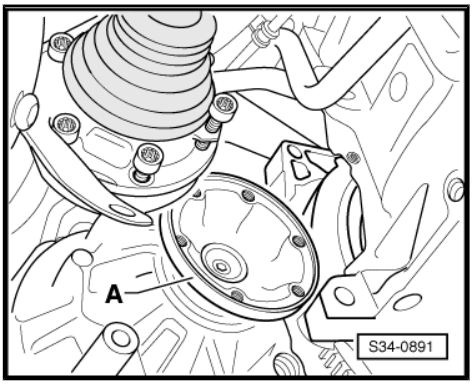
– Remove gearbox support -A- -arrows-.
– Remove engine/gearbox connecting screws below.




– Press the gearbox out of the dowel sleeves and carefully swing towards the assembly carrier.
– Slightly push the engine with the supporting device for engine -MP3-470 (3300 A)- forwards.
– Turn the gearbox via the spindles of the gearbox mount - 3282- downwards and backwards.




– Lower gearbox carefully, while doing so guide the right flange shaft -A- into the area of the flywheel/intermediate plate as shown.
– Change the gearbox position at the spindles of the gearbox mount - 3282- when lowering.

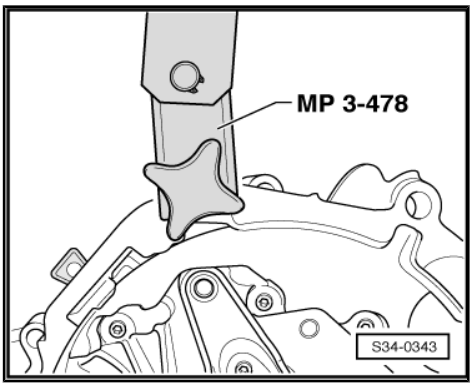



**Note**

*Observe all lines when lowering the gearbox.*

## 2.1.1 Transporting the gearbox

– Screw down gearbox suspension device - MP3-478 (3336)- onto clutch housing.



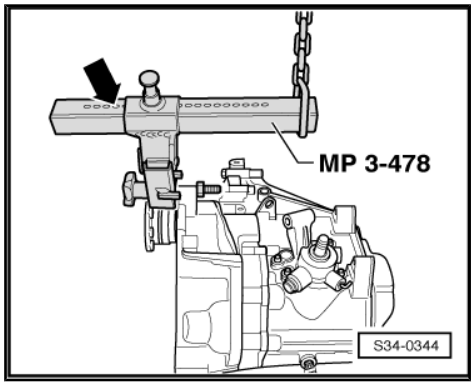

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– Adjust supporting arm at slide with locking pin -arrow-.

Number of visible holes = 5.

– Raise gearbox with workshop crane and gearbox suspension device - MP3-478 (3336)- .

– Set gearbox aside, for example in a transport container.




## 2.2 Install gearbox (Octavia II)

– Before installing, check the oil level and top up with gear oil ⇒ “3 Checking the gear oil level”, page 154 .

Capacity and specification ⇒ “4.2 Assignment gearbox - engine - Octavia II”, page 7 .

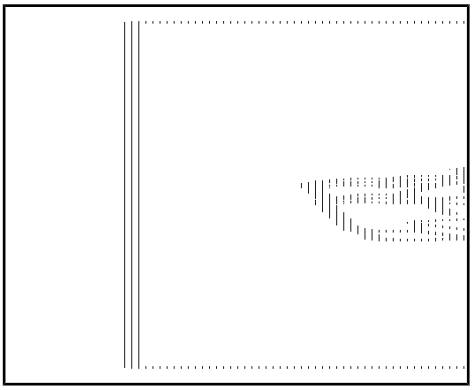
**Check the oil level and top up with gear oil, proceed according to the following overview.**

| “Check the gear oil level and top up” | | |
|---|---|---|
| **Gearbox 0A4** | **»NO«** | **»YES«** |
| Original part | X | |
| with oil leakage | X | |
| Disassemble the complete gearbox | | X |
| Partially disassemble the gearbox[1] | | X |

1) Gearbox housing and clutch housing were not separated.

The installation of the gearbox occurs in reverse order. Observe the stress-free assembly bracket in the vehicle ⇒ Engine; Rep. gr. 10 .

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– Before installing the gearbox press the clutch release lever towards the gearbox housing and secure with mounting bolt or screw M 8 x 35.
– After installing the gearbox release screw again. The hole is then closed with the 3rd fixing screw for the cable support/ control cables.

**Note**

- *Clean the splines on the drive shaft and lubricate with a thin film of grease - G 000 100 - .*
- *Always replace the self-locking screws and nuts ⇒ Electronic Catalogue of Original Parts .*
- *If the gearbox is replaced, ensure the intermediate plate between the engine and gearbox is correctly installed.*
- *Check whether the dowel sleeves for centering the gearbox are present in the cylinder block, insert if necessary.*
- *Installing starter and cables ⇒ Electrical System; Rep. gr. 27 .*
- *Setting the shift mechanism*
  *⇒ "1.21 Setting the clutch control (Octavia II, Superb II and Yeti)", page 123 .*
- *Setting the shift mechanism*
  *⇒ "1.21 Setting the clutch control (Octavia II, Superb II and Yeti)", page 123*
- *If the front left vehicle level sensor - G78- was removed. then the headlight beam setting must be checked ⇒ Electrical System; Rep. gr. 94 .*

– Install noise insulation ⇒ Body Work; Rep. gr. 50 and lower part of the front left wheelhouse liner ⇒ Body Work; Rep. gr. 66 .
– Install the battery tray and battery ⇒ Electrical System; Rep. gr. 27 .

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

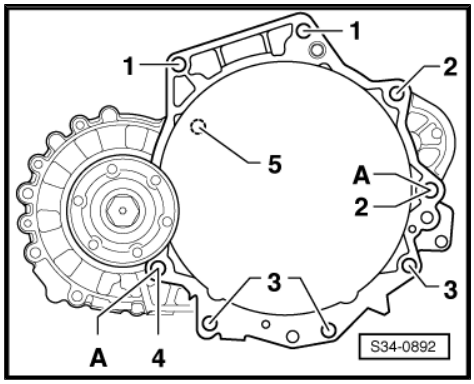
– Install air filter ⇒ Engine; Rep. gr. 23 .

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## 2.2.1 Tightening torques

**Vehicles with 1.9 l/77 kW TDI PD, 1.6 l/66/77 kW TDI CR and 2.0 l/81 TDI CR engines**

| Pos. | Screw | Pieces | Nm |
|---|---|---|---|
| 1 | M 12 x 50 | 2 | 80 |
| 2[1)] | M 12 x 150 | 2 | 80 |
| 3 | M 10 x 55 | 3 | 40 |
| 4 | M 12 x 60 | 1 | 80 |
| 5[2)] | M 6 x 8 | 1 | 10 |
| A | Dowel sleeves for centering | 2 | |




1) Screw with threaded pin

2) small cover plate for flywheel

| Component | Tightening torque |
|---|---|
| Gearbox console to gearbox[1)] | 40 Nm + 90° |
| Gearbox console to gearbox mount[1)] | 60 Nm + 90° |
| Support to gearbox mounting bracket and gearbox [1)] | 20 Nm + 90° |
| Slave cylinder to gearbox | ⇒ “1.19 Summary of components - Hydraulics, Octavia II, Superb II, Yeti”, page 45 |
| bracket for tube-hose line | ⇒ “1.19 Summary of components - Hydraulics, Octavia II, Superb II, Yeti”, page 45 |
| Cable support to gearbox | ⇒ “1.14 Summary of components - Control cables up to 10.06”, page 101 |
| Gearbox shift lever to gearshift shaft | ⇒ “1.14 Summary of components - Control cables up to 10.06”, page 101 |
| Pendulum support | ⇒ Engine; Rep. gr. 10 |
| Exhaust pipe with catalytic converter | ⇒ Engine; Rep. gr. 26 |
| Support for exhaust manifold | ⇒ Engine; Rep. gr. 26 |
| Bracket for electric cables | ⇒ Electrical system; Rep. gr. 27 |
| Drive shaft to flange shaft | ⇒ Chassis; Rep. gr. 40 |
| Coupling rod | ⇒ Chassis; Rep. gr. 40 |
| Assembly carrier with console | ⇒ Chassis; Rep. gr. 40 |
| Left track control arm | ⇒ Chassis; Rep. gr. 40 |
| Vehicle level sensor | ⇒ Chassis; Rep. gr. 40 |
| Protective cap drive shaft on engine | ⇒ Chassis; Rep. gr. 40 |
| Cover plate for steering gear | ⇒ Chassis; Rep. gr. 40 |
| Wheel bolts | ⇒ Chassis; Rep. gr. 44 |

1) always replace these screws.

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## 2.3 Remove gearbox (Superb II)

**Special tools and workshop equipment required**

- Transmission - trailer coupling - MP3-478 (3336) -
- Supporting device - MP9-200 (10-222A)-

- Adapter - MP9-200/18 (10-222A/18)-
- Gearbox mount - 3282-
- Adjusting plate - 3282/39-
- Mounting bracket - T10346-
- Engine/gearbox jack , e.g. - V.A.G 1383 A-
- Grease for splines - G 000 100-

– Remove engine cover ⇒ Engine.; Rep. gr. 10

**Note**

- *All cable straps that are detached or cut when removing should be attached again in the same place when installing.*
- *After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

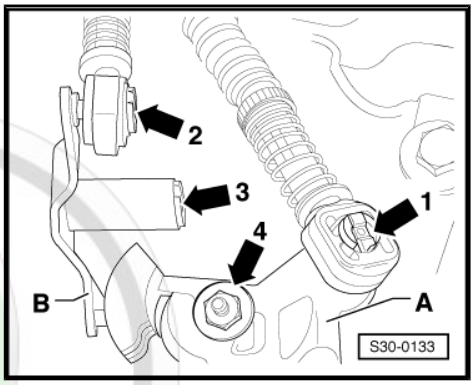
– Disconnect the battery-earth strap with the ignition off ⇒ Electrical System; Rep. gr. 27 .

– Remove air filter ⇒ Engine; Rep. gr. 23 .

– Remove battery and battery tray ⇒ Electrical System; Rep. gr. 27 .

– Remove circlip -arrow 1- for shift cable from gearbox shift lever -A-.

– Pull gear selector cable off pin.




**Metal relay lever**

– Remove circlip -arrow 2- for selector cable from relay lever -B-.

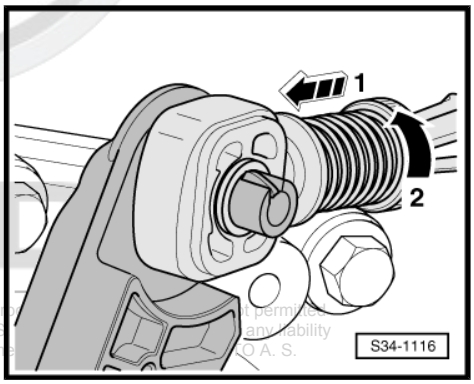
– Pull off the selector cable from the stud.

– Detach circlip -arrow 3- from the relay lever -B- and remove relay lever.

**Note**

*Always replace circlips ⇒ Electronic Catalogue of Original Parts*

**Plastic relay lever**




- In order to avoid damage to the selector cable. the cable lock must be separated from the selector cable before removal.

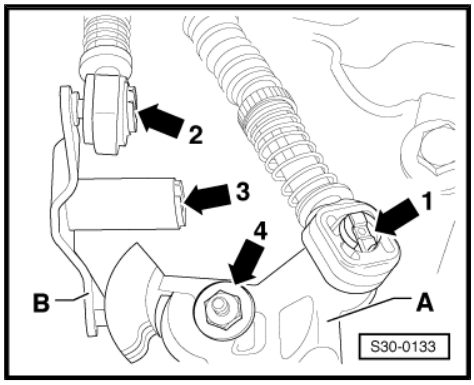
– Pull forward the locking mechanism as far as the stop in -direction of arrow 1-, then lock by turning to the left in -direction of arrow 2-.

– Remove relay lever together with cable lock ⇒ “1.16 Plastic relay lever”, page 106 .

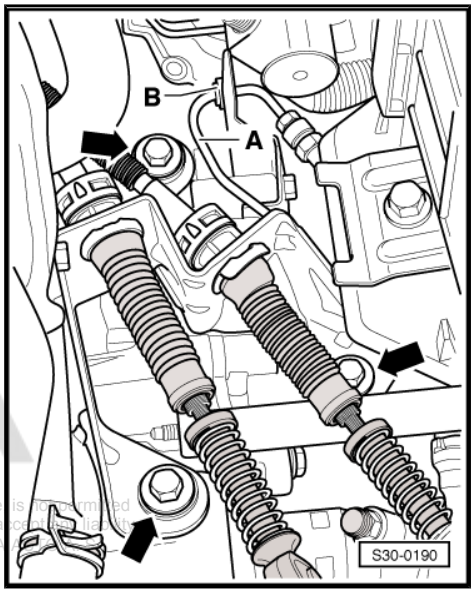
**Continued for all vehicles:**

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– Remove the gearshift lever -A-, for this step unscrew nut -arrow 4-.

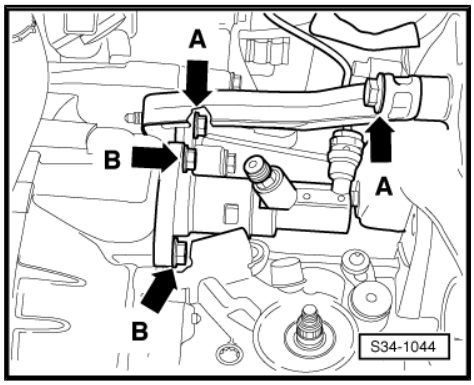



– Remove cable support from the gearbox -arrows- and tie up laterally together with selector cable and shift cable.
– Remove bracket -B- from the gearbox and pull off from the tube-hose line -A-.




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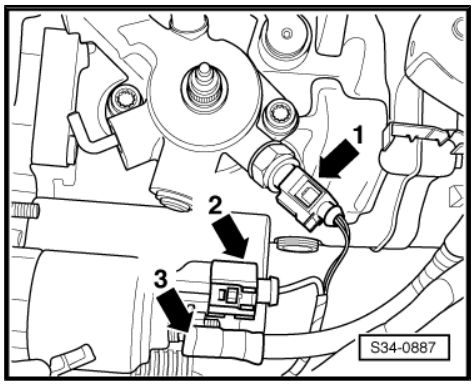
– Remove the support -arrows A-.
– Remove the slave cylinder -arrows B- and lay aside, secure with wire, do not open the line system.



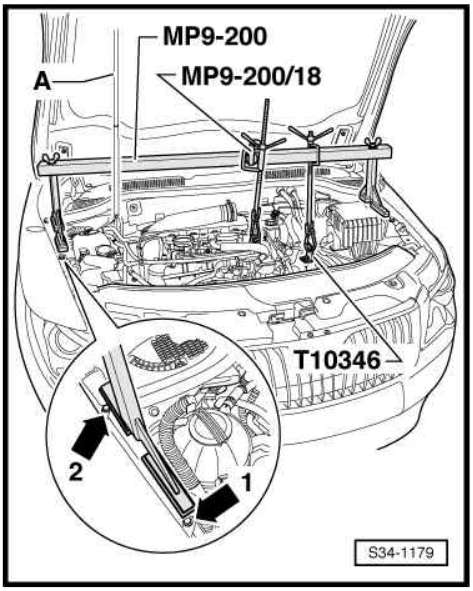

**WARNING**

*After removing the slave cylinder, do not operate the clutch pedal.*

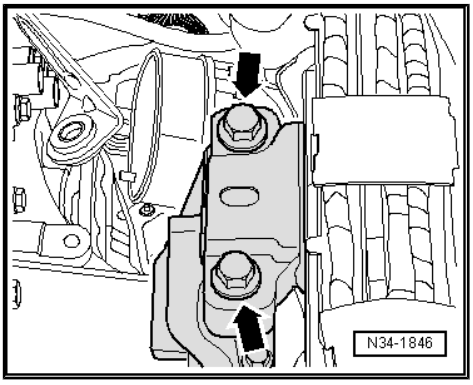
– Disconnect plug -arrow 1- from reversing light switch - F4- .
– Remove connector -arrow 2- and cable -arrow 3- from the starter.
– Free the pipes
– Remove top securing screws at starter.
– Remove engine/gearbox connecting screws at the top.



– If hose and cable connections are located in the area of the lifting eye of the engine for the supporting device - MP9-200 (10-222A)- , these must now be removed.
– Tighten the holder - T10346- on the rear of the three location holes for the battery tray.
– To do so, use a collar screw M6 or one of the fixing screws for the battery tray.
– Position the supporting device - MP9-200 (10 - 222 A)- behind the pressurized gas strut -A- for the front flap.
– The feet of the supporting device must be placed as shown in the illustration, behind the screw -arrow 1- and sideways up to the screw -arrow 2- on the wheelhouse frame side rail at the top.
– Connect the holder - T10346- with the supporting device .
– Hook the second spindle into the front left engine lifting eye.
– Slightly take up the weight of the engine/gearbox unit via the spindle. do not raise.

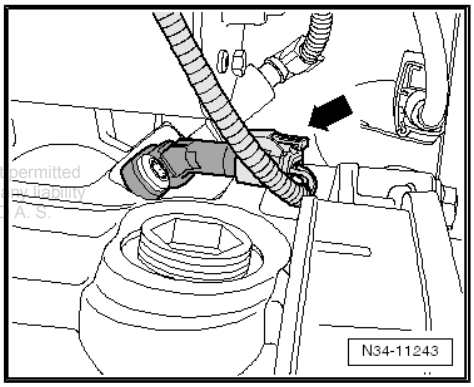



– Unscrew the fixing screws -arrows- from the gearbox mount.
– Loosen the front left wheel bolts.
– Raise vehicle ⇒ Maintenance ; Booklet Superb II .
– Fit the left front wheel ⇒ Chassis; Rep. gr. 44 .
– Remove noise insulation ⇒ Body Work; Rep. gr. 50 and front left wheelhouse liner ⇒ Body Work; Rep. gr. 66 .

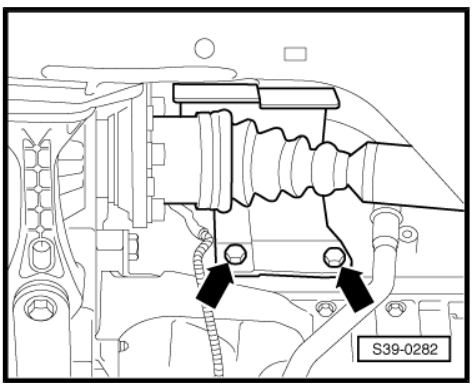



– Transmission for vehicles with start-stop system: pull plug -arrow- from Gearbox neutral position sender - G701- .
– Remove starter ⇒ Electrical System; Rep. gr. 27 .

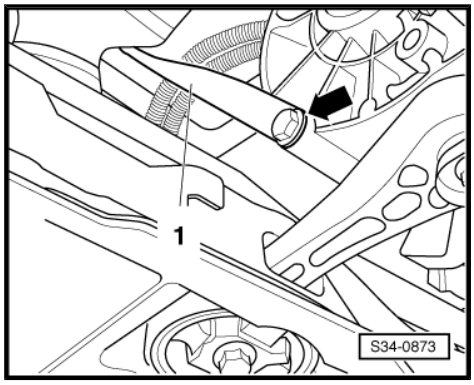
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– If applicable remove cap for drive shaft from the engine -arrows-.



– Remove support (if present) -1- for exhaust system from gearbox -arrow- ⇒ Engine; Rep. gr. 26 .
– Separate exhaust system at the clamping sleeve and remove bracket for the exhaust system from the assembly carrier ⇒ Engine; Rep. gr. 26 .
– Tie up pre-exhaust pipe.

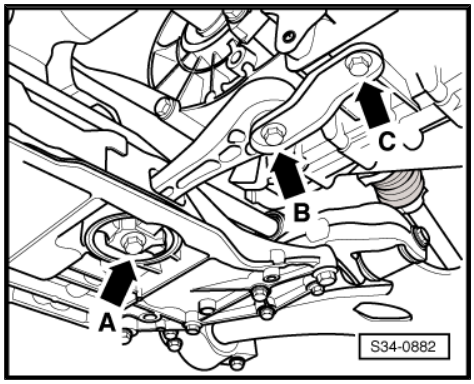



**Note**

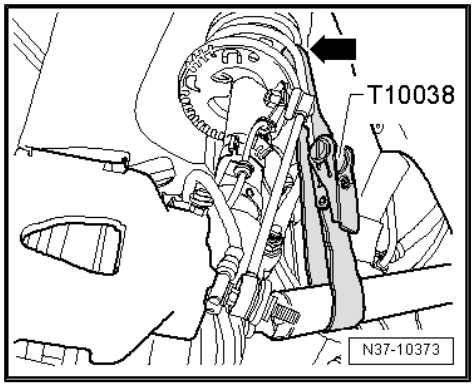
*The decoupling elements in the exhaust pipe should not be bent by more than 10° - risk of damage.*

– Pull off air guide hose ⇒ Engine; Rep. gr. 23 .

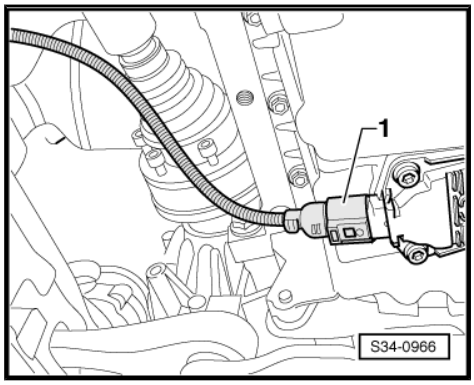
– Remove pendulum support -arrows A, B and C-.
– Remove drive shafts from flange shafts ⇒ Chassis; Rep. gr. 40 .




– Secure the drive shaft e.g. with the tensioning strap - T10038 - (while doing so do not damage the surface protection).

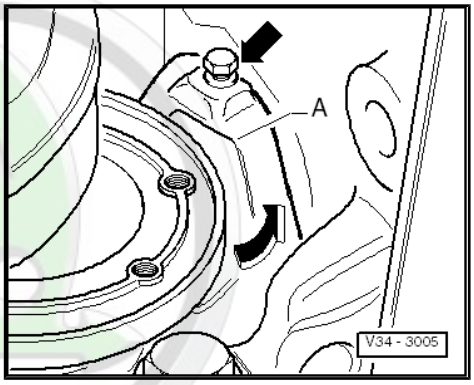



– Disconnect plug -1- from oil level and oil temperature sender - G266- .

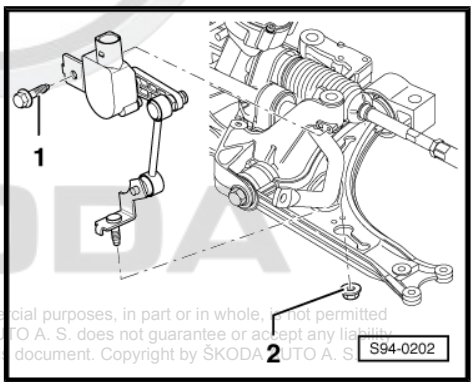



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– Remove small cover plate -A- for flywheel (if present).



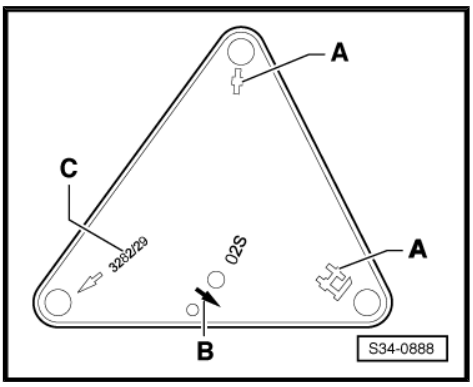

– Disconnect the plug connection on the front left vehicle level sensor - G78- (if present).
– Unscrew nut -2-.
– Screw out screw -1- and remove front left vehicle level sensor - G78- .
– Fix the assembly carrier before removing ⇒ Chassis; Rep. gr. 40 .
– Remove the assembly carrier with console without steering gear. left track control arm and coupling rod ⇒ Chassis; Rep. gr. 40 .
– Insert gearbox mount - 3282- into engine/gearbox jack , e.g. - V.A.G 1383 A - .



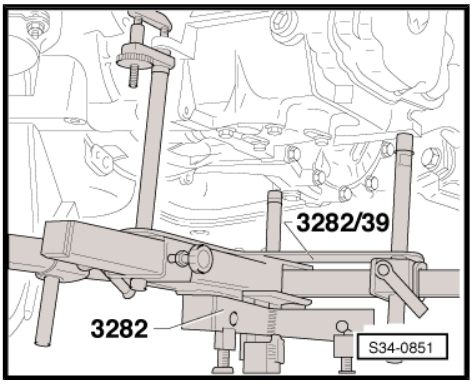

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Complete engine/gearbox jack with gearbox mount - 3282- and adjusting plate - 3282/39- as follows:

– Position adjusting plate - 3282/39- onto the gearbox mount - 3282- ( adjusting plate fits in only one position).
– Align arms of the gearbox mount with the holes in the adjusting plate .
– Screw in the mounting elements -A- and -C- as shown on adjusting plate .
– Position engine/gearbox jack below vehicle, arrow -B- on adjusting plate points in the direction of travel/vehicle.



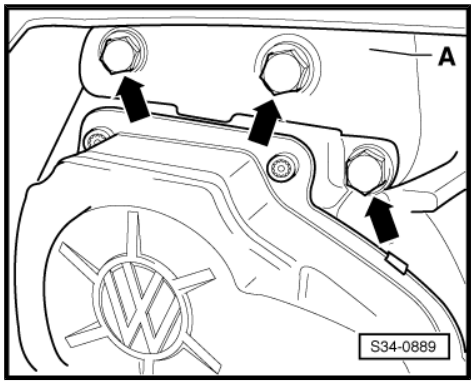

– Align adjusting plate parallel to the gearbox and lock securing elements of the support at the gearbox.
– Carefully lower engine with gearbox slightly.



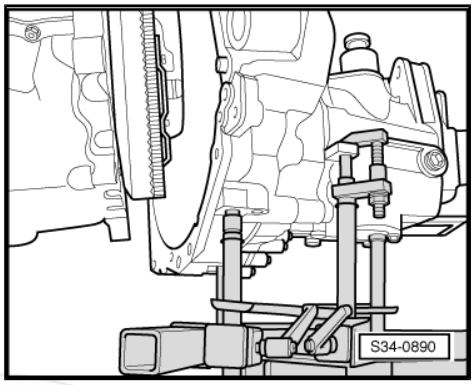

**Note**

*Observe all lines when lowering the gearbox.*

– Remove gearbox console -A- -arrows-.
– Remove engine/gearbox connecting screws below.



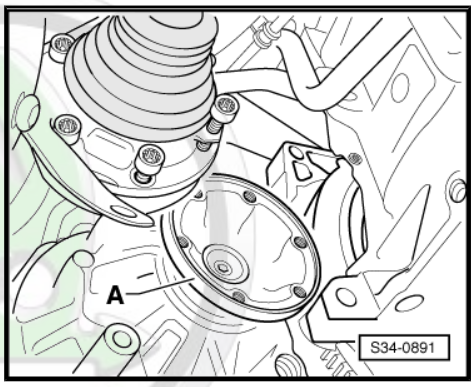

– Press the gearbox out of the sleeves.
– Turn the gearbox via the spindles of the gearbox mount - 3282- downwards and backwards.




– Lower gearbox carefully, while doing so guide the right flange shaft -A- into the area of the flywheel/intermediate plate as shown.
– Change the gearbox position at the spindles of the gearbox mount - 3282- when lowering.

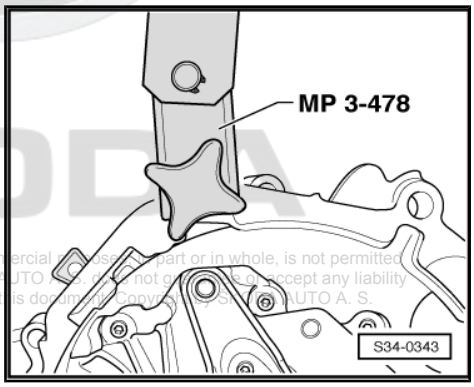
**Note**

*Observe all lines when lowering the gearbox.*




## 2.3.1 Transporting the gearbox

– Screw down gearbox suspension device - MP3-478 (3336) - onto clutch housing.



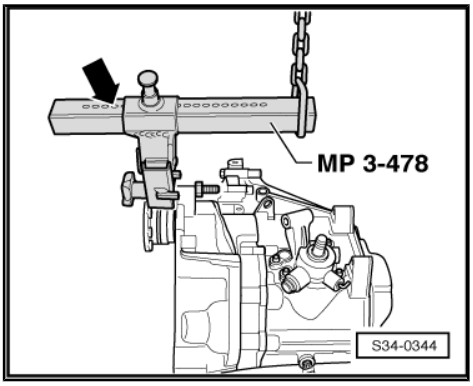

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– Adjust supporting arm at slide with locking pin -arrow-.

Number of visible holes = 5.

– Raise gearbox with workshop crane and gearbox suspension device - MP3-478 (3336)- .

– Set gearbox aside, for example in a transport container.




## 2.4 Install gearbox (Superb II)

**Please observe the following record of the subject - “check gear oil and top up.”**

| “Check the gear oil level and top up” | | | | |
|---|---|---|---|---|
| | | »No« | »Yes« | »Yes« |
| Gearbox | Original part | X | | |
| | No oil leakage | X | | |
| | Was completely dis-assembled | | X before gearbox has been fitted[1)] | |
| | Was partially disas-sembled[2)] | | | X after gearbox has been fitted[3)] |

[1)] Top up with gear oil; oil filling quantity
⇒ “4.3 Assignment gearbox - engine, Superb II”, page 8 .

[2)] Gearbox housing and clutch housing were not separated.

[3)] Top up with gear oil and check the oil level
⇒ “3 Checking the gear oil level”, page 154 .

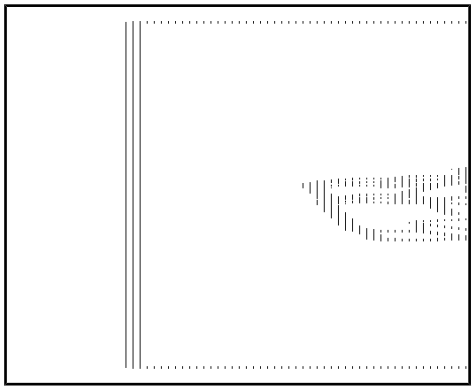
Specification ⇒ electronic catalogue of original parts .

The installation of the gearbox occurs in reverse order. Observe the stress-free assembly bracket in the vehicle ⇒ Engine; Rep. gr. 10 .

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– Before installing the gearbox press the clutch release lever towards the gearbox housing and secure with mounting bolt or screw M 8 x 35.

– After installing the gearbox release screw again. The hole is then closed with the 3rd fixing screw for the cable support/ control cables.



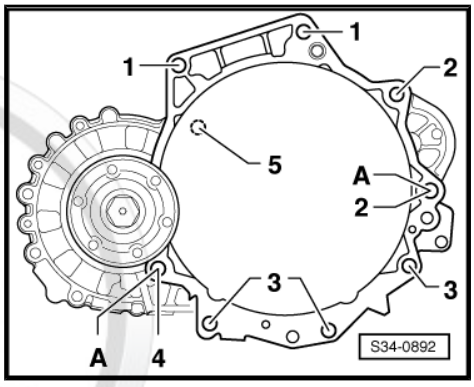
**Note**

- *Clean spline of drive shaft and apply a thin film of grease for splines - G 000 100 - .*
- *Always replace the self-locking screws and nuts ⇒ Electronic Catalogue of Original Parts .*
- *If the gearbox is replaced, ensure the intermediate plate between the engine and gearbox is correctly installed.*
- *Check whether the dowel sleeves for centering the gearbox are present in the cylinder block, insert if necessary.*
- *Installing starter and cables ⇒ Electrical System; Rep. gr. 27 .*
- *Setting the shift mechanism ⇒ "1.21 Setting the clutch control (Octavia II, Superb II and Yeti)", page 123 .*
- *If the front left vehicle level sensor - G78- was removed. then the headlight beam setting must be checked ⇒ Electrical System; Rep. gr. 94 .*
- *After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*
- *Install air filter ⇒ Engine; Rep. gr. 23 .*

## 2.4.1 Tightening torques

**Attachment of gearbox to engine 1.9 ltr./77 kW TDI PD and 1.6 ltr./77 kW TDI CR (flange fig. gearbox)**

| Pos. | Screw | Pieces | Nm |
|---|---|---|---|
| 1 | M 12 x 50 | 2 | 80 |
| 2[1)] | M 12 x 150 | 2 | 80 |
| 3 | M 10 x 50 | 3 | 40 |
| 4 | M 12 x 60 | 1 | 80 |
| 5[2)] | M 6 x 8 | 1 | 10 |
| A | Dowel sleeves for centering | 2 | |




[1)] Screw with threaded pin

[2)] small cover plate for flywheel

| Component | Tightening torque |
|---|---|
| Gearbox console to gearbox[1)] | 40 Nm + 90° |
| Gearbox console to gearbox mount[1)] | 60 Nm + 90° |
| Support to gearbox mounting bracket and gearbox [1)] | 20 Nm + 90° |
| Cover plate for flywheel | 10 Nm |

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| Component | Tightening torque |
|---|---|
| Slave cylinder to gearbox | ⇒ “1.19 Summary of components - Hydraulics, Octavia II, Superb II, Yeti”, page 45 |
| bracket for tube-hose line | ⇒ “1.19 Summary of components - Hydraulics, Octavia II, Superb II, Yeti”, page 45 |
| Cable support to gearbox | ⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103 |
| Gearbox shift lever to gearshift shaft | ⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103 |
| Pendulum support | ⇒ Engine; Rep. gr. 10 |
| Exhaust pipe with catalytic converter | ⇒ Engine; Rep. gr. 26 |
| Support for exhaust manifold | ⇒ Engine; Rep. gr. 26 |
| Bracket for electric cables | ⇒ Electrical system; Rep. gr. 27 |
| Drive shaft to flange shaft | ⇒ Chassis; Rep. gr. 40 |
| Protective cap drive shaft on engine | ⇒ Chassis; Rep. gr. 40 |
| Coupling rod | ⇒ Chassis; Rep. gr. 40 |
| Assembly carrier with console | ⇒ Chassis; Rep. gr. 40 |
| Left track control arm | ⇒ Chassis; Rep. gr. 40 |
| Vehicle level sensor | ⇒ Chassis; Rep. gr. 40 |
| Wheel bolts | ⇒ Chassis; Rep. gr. 44 |
| Cover plate for steering gear | ⇒ Chassis; Rep. gr. 48 |

[1] Always replace these screws ⇒ Electronic Catalogue of Original Parts .

## 2.5 Removing gearbox (Yeti)

**Special tools and workshop equipment required**

- Supporting device - T30099-
- Tensioning strap - T10038-
- Gearbox mount - 3282-
- Adjusting plate - 3282/39-
- Engine/gearbox jack (e.g. - V.A.G 1383A- )
- Transmission - trailer coupling - MP3-478 (3336)-

– Remove engine cover ⇒ Engine.; Rep. gr. 10

**Note**

- *All cable straps that are detached or cut when removing should be attached again in the same place when installing.*
- *After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

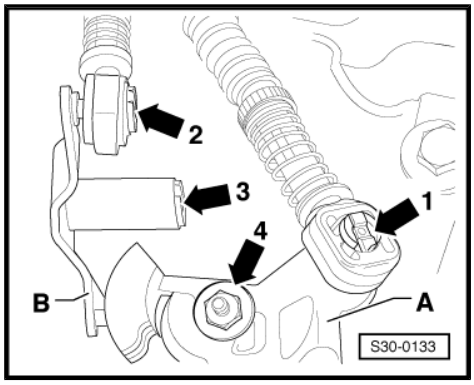
– Disconnect the battery-earth strap with the ignition off ⇒ Electrical System; Rep. gr. 27 .

– Remove air filter ⇒ Engine; Rep. gr. 23 .

– Remove battery and battery tray ⇒ Electrical System; Rep. gr. 27 .

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– Remove lock washer -arrow 1- for shift cable from gearbox shift lever -A-.
– Pull off the shift cable from the stud.



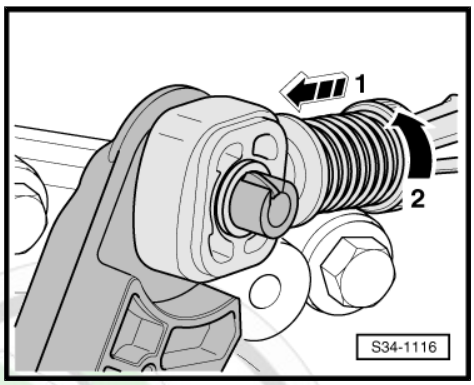

**Note**

*Always replace circlips ⇒ Electronic Catalogue of Original Parts*

**Plastic relay lever**

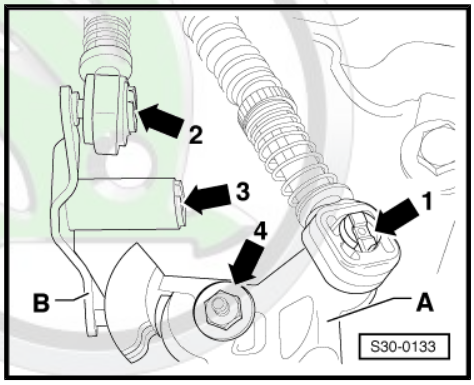
- In order to avoid damage to the selector cable. the cable lock must be separated from the selector cable before removal.

– Pull forward the locking mechanism as far as the stop in -direction of arrow 1-, then lock by turning to the left in -direction of arrow 2-.
– Remove relay lever together with cable lock ⇒ “1.16 Plastic relay lever”, page 106 .

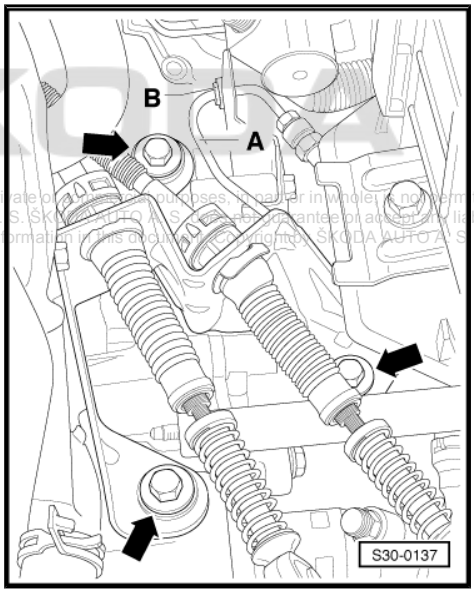



**Continued for all vehicles:**

– Remove the gearshift lever -A-, for this step unscrew nut -arrow 4-.

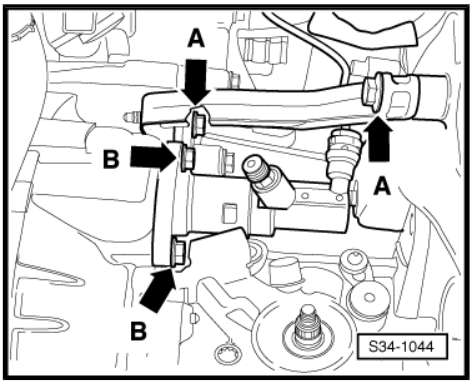



– Remove cable support from the gearbox -arrows- and tie up laterally together with selector cable and shift cable.
– Remove bracket -B- from the gearbox and pull off from the tube-hose line -A-.




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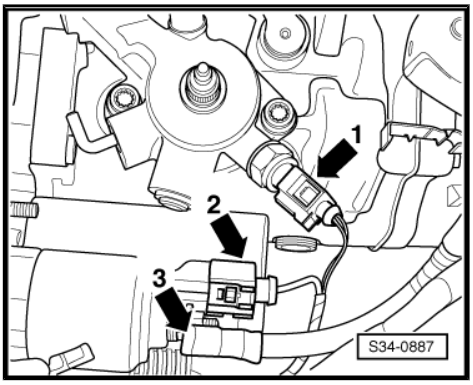
– Remove the support -arrows A-.
– Remove the slave cylinder -arrows B- and lay aside, secure with wire, do not open the line system.



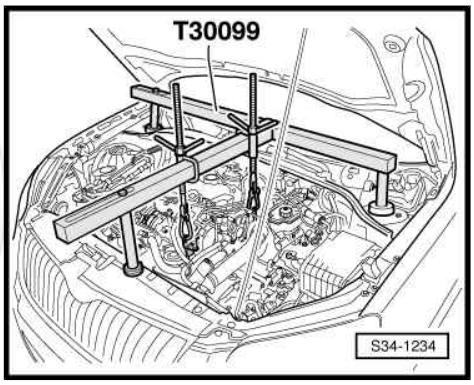

**Note**

*Do not depress the clutch pedal.*

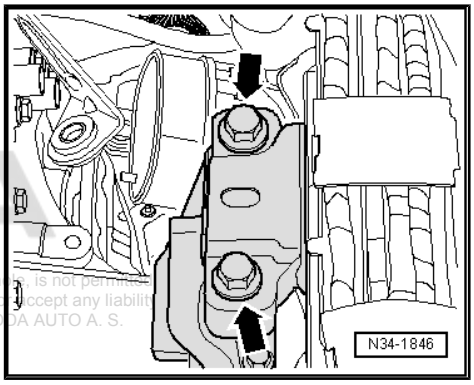
– Pull out the plug for the reversing lights -arrow 1-.
– Remove connector -arrow 2- and cable -arrow 3- from the starter.
– Remove top securing screws at starter.
– Remove engine/gearbox connecting screws at the top.
– If hose and cable connections are located in the area of the lifting eye of the engine for the supporting device - T30099- , these must now be removed.




– Fit supporting device - T30099- .
– Hang the spindle of the support fixture in the lifting eye of the engine.
– Slightly take up the weight of the engine/gearbox unit via the spindle. do not raise.

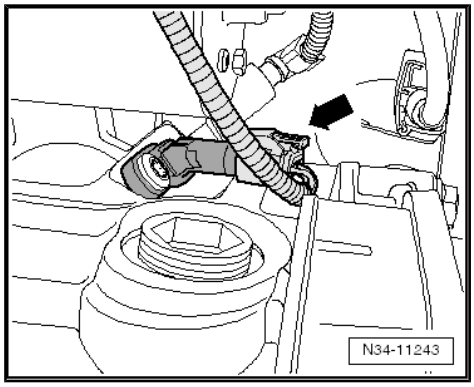



– Remove fixing screws -arrows- for engine and gearbox mount from above.
– Loosen the front wheel bolts.
– Raise vehicle ⇒ Maintenance ; Booklet Yeti .
– Fit the left front wheel ⇒ Chassis; Rep. gr. 44 .
– Remove noise insulation ⇒ Body Work; Rep. gr. 50 and front left wheelhouse liner ⇒ Body Work; Rep. gr. 66 .

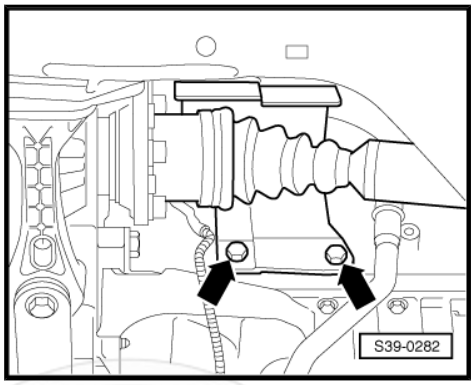



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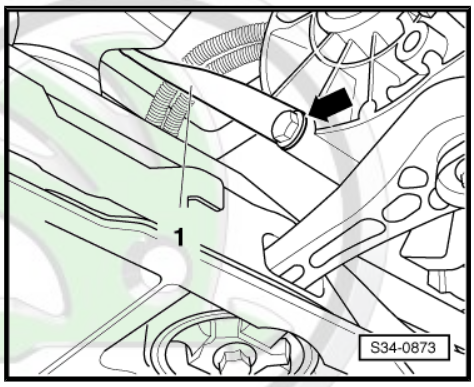
– Transmission for vehicles with start-stop system: pull plug -arrow- from Gearbox neutral position sender - G701- .
– Remove starter ⇒ Electrical System; Rep. gr. 27 .




– If applicable remove cap for drive shaft from the engine -arrows-.




– Remove support (if present) -1- for exhaust system from gearbox -arrow- ⇒ Engine; Rep. gr. 26 .
– Separate exhaust system at the clamping sleeve and remove bracket for the exhaust system from the assembly carrier ⇒ Engine; Rep. gr. 26 .
– Tie up pre-exhaust pipe.

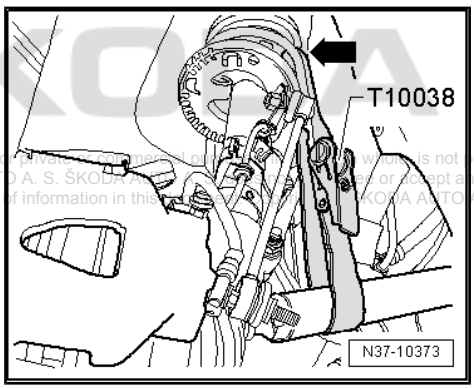



**Note**

*The decoupling elements in the exhaust pipe should not be bent by more than 10° - risk of damage.*

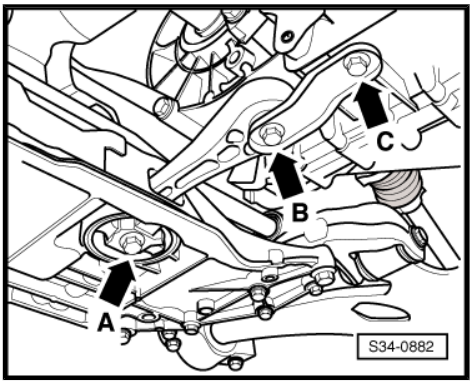
– Pull off air guide hose ⇒ Engine; Rep. gr. 23 .
– Remove drive shafts from flange shafts ⇒ Chassis; Rep. gr. 40 .

– Secure the drive shaft e.g. with tensioning strap - T10038- (while doing so do not damage the surface protection).

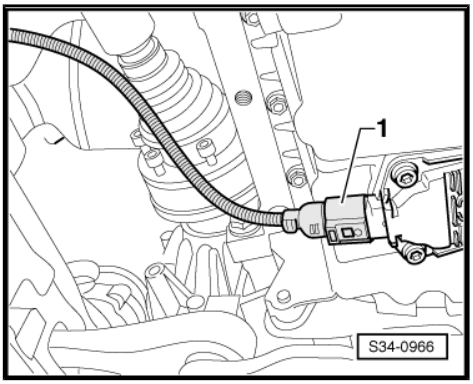



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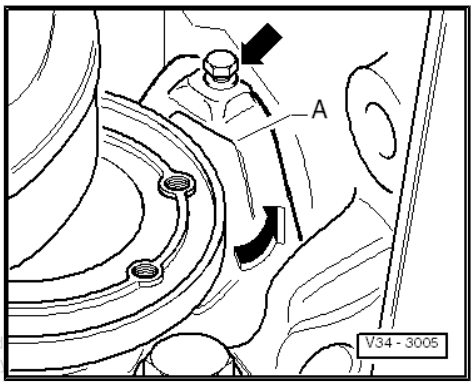
– Unscrew screws -A,B- and -C- and remove pendulum support.




– Disconnect plug -1- from oil level and oil temperature sender - G266- .

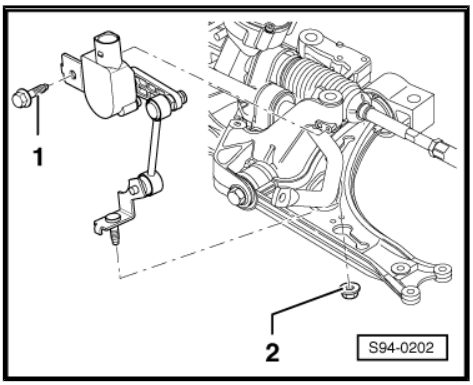



– Remove small cover plate -A- for flywheel (if present).




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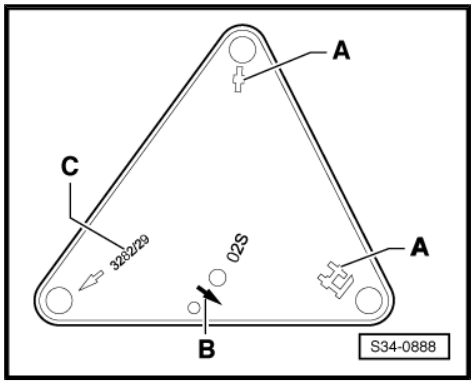
– Disconnect the plug connection on the vehicle level sensor (if present).
– Unscrew nut -2-.
– Release screw -1- and remove the sender.
– Fix the assembly carrier before removing ⇒ Chassis; Rep. gr. 40 .
– Remove the assembly carrier with console without steering gear. left track control arm and coupling rod ⇒ Chassis; Rep. gr. 40 .
– Insert gearbox mount - 3282- into engine/gearbox jack , e.g. - V.A.G 1383 A- .



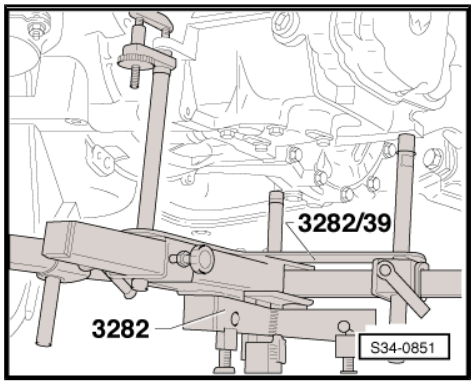

Complete engine/gearbox jack with gearbox mount - 3282- and adjusting plate - 3282/39- as follows:

– Position adjusting plate - 3282/39- on gearbox mount - 3282- ( adjusting plate fits in only one position).
– Align arms of the gearbox mount to match the holes in the adjusting plate .

– Screw in the mounting elements -A- and -C- as shown on adjusting plate .
– Position engine/gearbox jack below vehicle, arrow -B- on adjusting plate points in the direction of travel/vehicle.



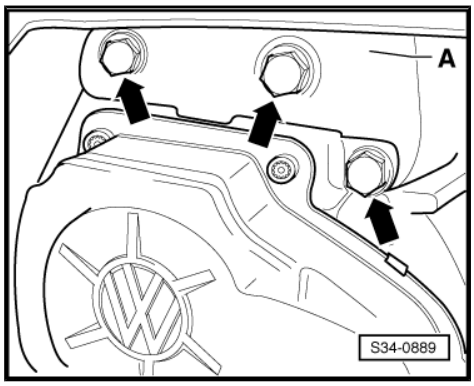

– Align adjusting plate parallel to the gearbox and lock securing elements of the support at the gearbox.
– Carefully lower engine with gearbox slightly.




**Note**

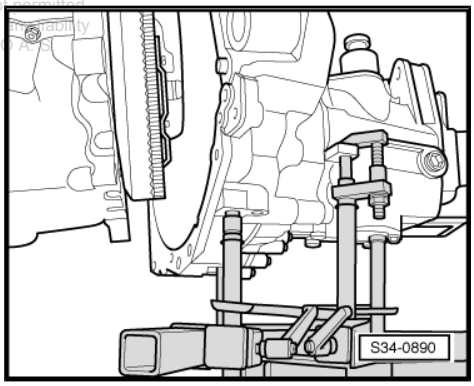
- *When lowering the engine/gearbox unit, make sure the gearbox does not touch the assembly carrier.*
- *Observe all lines when lowering the gearbox.*

– Remove gearbox console -A- -arrows-.
– Remove engine/gearbox connecting screws below.

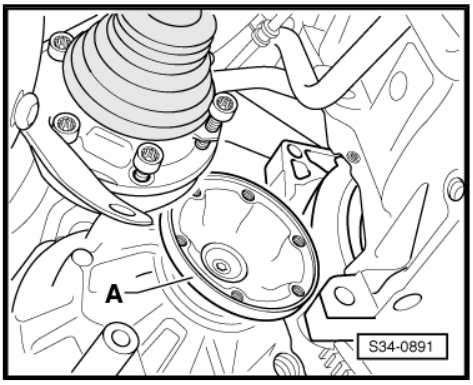



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– Press the gearbox out of the dowel sleeves and carefully swing towards the assembly carrier.
– Turn the gearbox via the spindles of the gearbox mount - 3282- downwards and backwards.



– Lower gearbox carefully, while doing so guide the right flange shaft -A- into the area of the flywheel/intermediate plate as shown.
– Change the gearbox position at the spindles of the gearbox mount - 3282- when lowering.

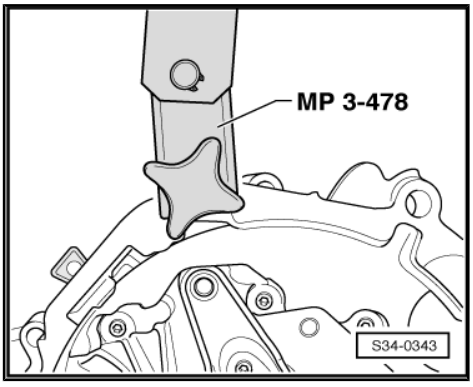



**Note**

*Observe all lines when lowering the gearbox.*

## 2.5.1 Transporting the gearbox

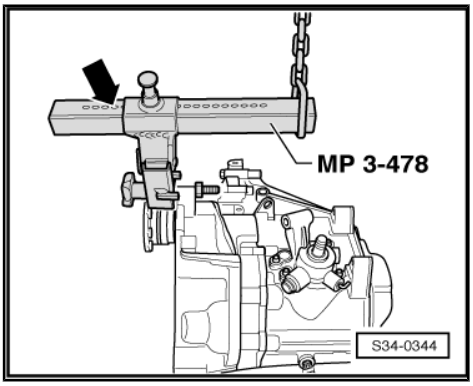
– Screw gearbox suspension device - MP3-478 (3336)- to clutch housing.




– Adjust supporting arm at slide with locking pin -arrow-.

Number of visible holes = 5.

– Raise gearbox with workshop crane and gearbox suspension device - MP3-478 (3336)- .
– Set gearbox aside, for example in a transport container.




## 2.6 Installing gearbox (Yeti)

– Before installing, check the oil level and top up with gear oil
⇒ “3 Checking the gear oil level”, page 154 .

Capacity and specification
⇒ “4.4 Assignment gearbox - engine, Yeti”, page 8 .

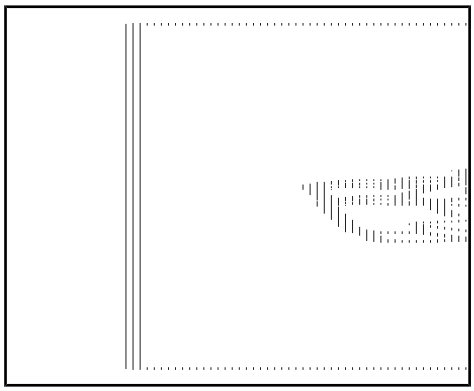
**Check the oil level and top up with gear oil, proceed according to the following overview**

| “Check the gear oil level and top up” | | |
|---|---|---|
| **Gearbox 0A4** | **»NO«** | **»YES«** |
| Original part | X | |
| with oil leakage | X | |
| Disassemble the complete gearbox | | X |
| Partially disassemble the gearbox[1] | | X |

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[1] Gearbox housing and clutch housing were not separated.

The installation of the gearbox occurs in reverse order. Observe the stress-free assembly bracket in the vehicle ⇒ Engine; Rep. gr. 10 .



– Before installing the gearbox press the clutch release lever towards the gearbox housing and secure with mounting bolt or screw M 8 x 35.
– Release again screw after gearbox and slave cylinder installation. The hole is then closed with the 3rd fixing screw for the cable support/control cables.

**Note**

- *Clean the splines on the drive shaft and lubricate with a thin film of grease - G 000 100- .*
- *Always replace the self-locking screws and nuts ⇒ Electronic Catalogue of Original Parts .*
- *If the gearbox is replaced, ensure the intermediate plate between the engine and gearbox is correctly installed.*
- *Check whether the dowel sleeves for centering the gearbox are present in the cylinder block, insert if necessary.*
- *Installing starter and cables ⇒ Electrical System; Rep. gr. 27 .*
- *Setting the shift mechanism*
  *⇒ "1.21 Setting the clutch control (Octavia II, Superb II and Yeti)", page 123 .*
- *If the front left vehicle level sensor - G78- was removed. then the headlight beam setting must be checked ⇒ Electrical System; Rep. gr. 94 .*

– Install noise insulation ⇒ Body Work; Rep. gr. 50 and lower part of the front left wheelhouse liner ⇒ Body Work; Rep. gr. 66 .
– Install the battery tray and battery ⇒ Electrical System; Rep. gr. 27 .

**Note**

*After the battery earth strap is disconnected and connected, carry out additional operations ⇒ Electrical System; Rep. gr. 27 .*

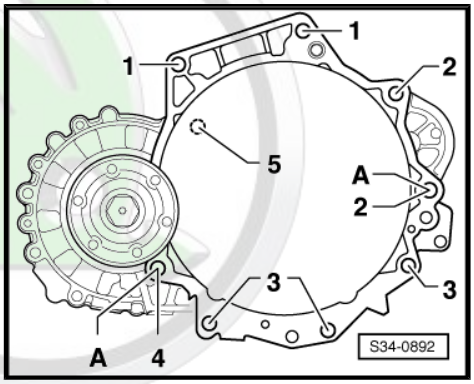
– Install air filter ⇒ Engine; Rep. gr. 23 .

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## 2.6.1 Tightening torques

**Vehicles with 2.0 ltr./81 kW TDI CR and 1.6 ltr./77 kW TDI CR engines**

| Pos. | Screw | Pieces | Nm |
|---|---|---|---|
| 1 | M12 x 50 | 2 | 80 |
| 2[1)] | M12 x 150 | 2 | 80 |
| 3 | M10 x 50 | 3 | 40 |
| 4 | M12 x 60 | 1 | 80 |
| 5[2)] | M6 x 8 | 1 | 10 |
| A | Dowel sleeves for centering | 2 | |




1) Screw with threaded pin M8 x 16

2) small cover plate for flywheel

| Component | Tightening torque |
|---|---|
| Gearbox console to gearbox[1)] | 40 Nm + 90° |
| Gearbox console to gearbox mount[1)] | 60 Nm + 90° |
| Support to gearbox mounting bracket and gearbox [1)] | 20 Nm + 90° |
| Cover plate for flywheel | 10 Nm |
| Slave cylinder to gearbox | ⇒ “1.19 Summary of components - Hydraulics, Octavia II, Superb II, Yeti”, page 45 |
| bracket for tube-hose line | ⇒ “1.19 Summary of components - Hydraulics, Octavia II, Superb II, Yeti”, page 45 |
| Cable support to gearbox | ⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103 |
| Gearbox shift lever to gearshift shaft | ⇒ “1.15 Summary of components - Control cables as of 11.06”, page 103 |
| Pendulum support | ⇒ Engine; Rep. gr. 10 |
| Exhaust pipe with catalytic converter | ⇒ Engine; Rep. gr. 26 |
| Support for exhaust manifold | ⇒ Engine; Rep. gr. 26 |
| Bracket for electric cables | ⇒ Electrical system; Rep. gr. 27 |
| Drive shaft to flange shaft | ⇒ Chassis; Rep. gr. 40 |
| Protective cap drive shaft on engine | ⇒ Chassis; Rep. gr. 40 |
| Coupling rod | ⇒ Chassis; Rep. gr. 40 |
| Assembly carrier with console | ⇒ Chassis; Rep. gr. 40 |
| Left track control arm | ⇒ Chassis; Rep. gr. 40 |
| Vehicle level sensor | ⇒ Chassis; Rep. gr. 40 |
| Wheel bolts | ⇒ Chassis; Rep. gr. 44 |
| Cover plate for steering gear | ⇒ Chassis; Rep. gr. 48 |

1) always replace these screws.

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# 3 Checking the gear oil level

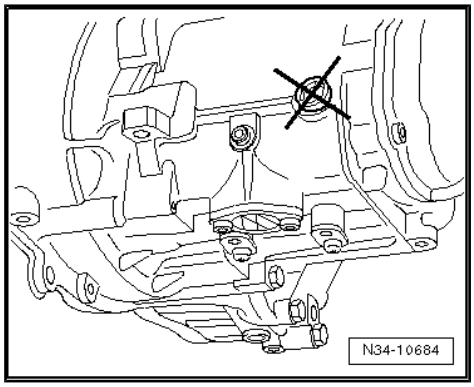
Drain out gear oil ⇒ “3.1 Draining out gear oil”, page 154 .

Pour in gear oil ⇒ “3.2 Pour in gear oil”, page 155 .

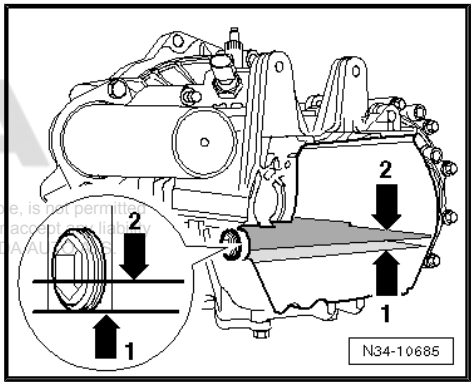
**Note**

- *The gearbox oil level can only be checked by draining ⇒ “3.1 Draining out gear oil”, page 154 the gear oil fully and then topping up ⇒ “3.2 Pour in gear oil”, page 155 again.*
- *To drain off the gear oil a bearing pin for the gearshift forks in the gearbox must be removed. The gearshift shaft must be locked in such a way that the position of the gearshift forks is not changed e.g. through unintentional operation of the gearshift mechanism.*

**Checking the gear oil in accordance with the previously known method is no longer possible.**




**The inclination of the engine/gearbox unit was changed, the bottom edge of the filler hole -1- is therefore located below the new oil level -2-.**




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## 3.1 Draining out gear oil

**Special tools and workshop equipment required**

- Catch pan

**Note**

*To drain off the gear oil a bearing pin for the gearshift forks in the gearbox must be removed. The gearshift shaft must be locked in such a way that the position of the gearshift forks is not changed e.g. through unintentional operation of the gearshift mechanism.*

– Remove air filter ⇒ Engine; Rep. gr. 23 .

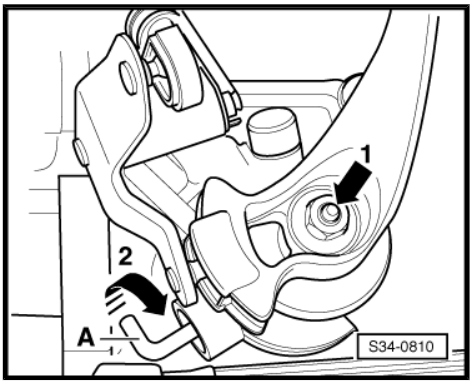
Lock the gearshift shaft as follows:

– Push down the gearshift lever in the direction of arrow -1- into the gate of the 1st/2nd gear. Turn the angle lever -A- in -direction of arrow 2-, until it locks.

This locks the gearshift shaft and can no longer be moved.

– Remove the sound dampening system ⇒ Body Work; Rep. gr. 50 .

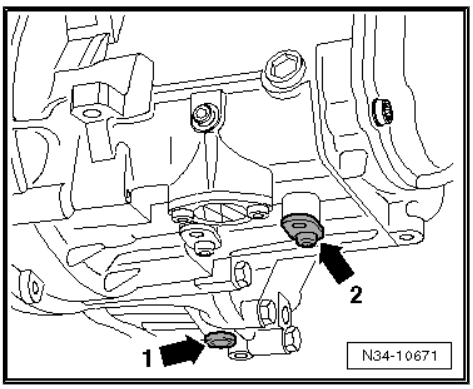
– Place the catch pan under the gearbox.




– Remove oil drain plug -1-, bearing pin -2- and drain out gear oil.

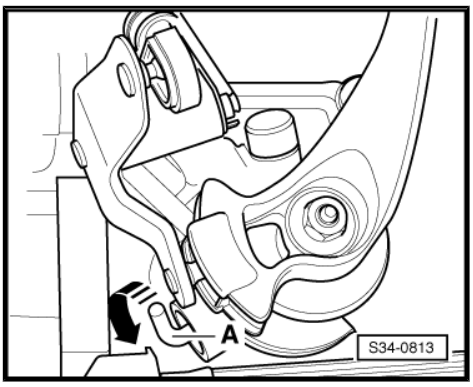
– Install oil drain plug -1- and tighten to tightening torque ⇒ “5 Repairing gearbox housing and clutch housing”, page 182 .

– Install bearing pin -2- (always replace O-ring ⇒ Electronic Catalogue of Original Parts ) and tighten to tightening torque ⇒ “4.4 Removing and installing gearbox housing and shift mechanism”, page 162 .




– Turn angle lever -A- back to the initial position in -direction of arrow-.

– Install the noise insulation ⇒ Body Work; Rep. gr. 50 .




## 3.2 Pour in gear oil

**Special tools and workshop equipment required**

♦ Hose approx. 600 mm long with outer ∅ 10 mm

♦ Hopper

Gearbox oil specification ⇒ Electronic Catalogue of Original Parts .

Gearbox oil capacity (Octavia II)
⇒ “4.2 Assignment gearbox - engine - Octavia II”, page 7 .

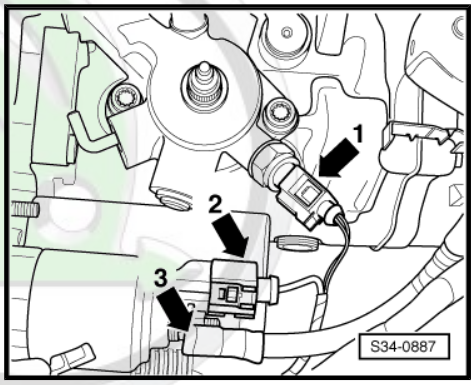
Gearbox oil capacity (Superb II)
⇒ “4.3 Assignment gearbox - engine, Superb II”, page 8 .

Gearbox oil capacity (Yeti)
⇒ “4.4 Assignment gearbox - engine, Yeti”, page 8 .

– Remove air filter (if it was not yet removed) ⇒ Engine; Rep. gr. 23 .

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– Remove reversing light switch - F4- -arrow 1-.
– Insert hose with hopper into the location hole of the reversing light switch and pour in gear oil
⇒ “4.1 Filling capacity”, page 7 .
– Install reversing light switch - F4- -arrow 1- and tighten to tightening torque
⇒ “6 Repairing the shift mechanism on the gearbox”, page 188 .
– Inspect function of shift mechanism
⇒ “1.21.1 Function”, page 126 .
– Install air filter ⇒ Engine; Rep. gr. 23 .




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# 4 Disassembling and assembling the gearbox

Gearbox - Summary of components
⇒ “4.1 Gearbox - Summary of components”, page 157 .

Summary of components
⇒ “4.2 Summary of components”, page 158 .

Removing and installing gearbox housing cover and 5th gear
⇒ “4.3 Removing and installing gearbox housing cover and 5th gear”, page 160 .

Removing and installing gearbox housing and shift mechanism
⇒ “4.4 Removing and installing gearbox housing and shift mechanism”, page 162 .

Removing and installing the drive shaft, output shaft, differential gear and shift forks
⇒ “4.5 Removing and installing the drive shaft, output shaft, differential gear and shift forks”, page 163 .

Mounting sequence - Removing and installing gearbox housing cover and 5th gear
⇒ “4.6 Mounting sequence - Removing and installing gearbox housing cover and 5th gear”, page 164 .

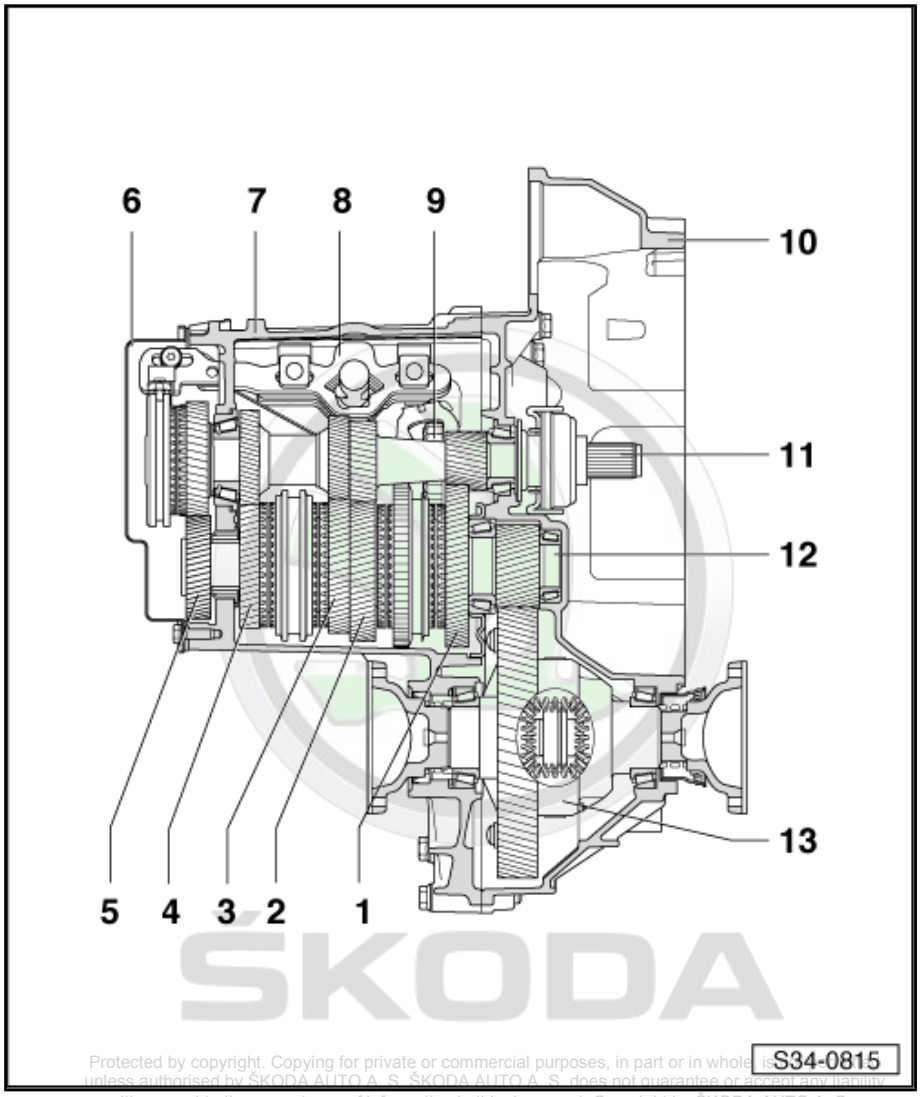
Mounting sequence - completely disassemble and assemble gearbox
⇒ “4.7 Mounting sequence - completely disassembling and assembling the gearbox”, page 169 .

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## 4.1 Gearbox - Summary of components

1 - 1st gear
2 - 2nd gear
3 - 3rd gear
4 - 4th gear
5 - 5th gear
6 - Cover for gearbox housing
7 - Gearbox housing
8 - Shift mechanism
- ❑ (Gearshift forks)

9 - Reverse gear
10 - Clutch housing
11 - Drive shaft
12 - Output shaft
13 - Differential




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## 4.2 Summary of components

Mounting sequence - Removing and installing gearbox housing cover and 5th gear
⇒ “4.6 Mounting sequence - Removing and installing gearbox housing cover and 5th gear”, page 164 .

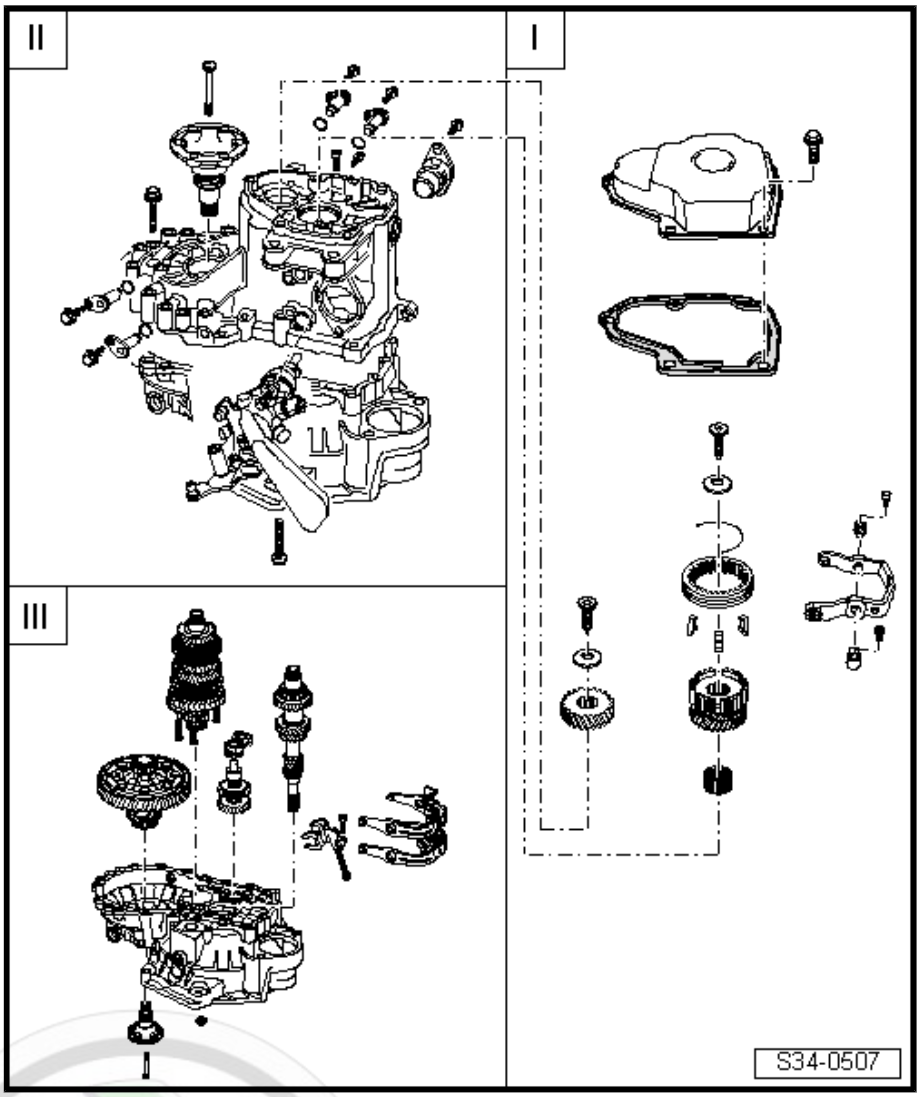
Mounting sequence - completely disassemble and assemble gearbox

⇒ “4.7 Mounting sequence - completely disassembling and assembling the gearbox”, page 169 .

I - Summary of components - Removing and installing gearbox housing cover and 5th gear
⇒ “4.3 Removing and installing gearbox housing cover and 5th gear”, page 160 .

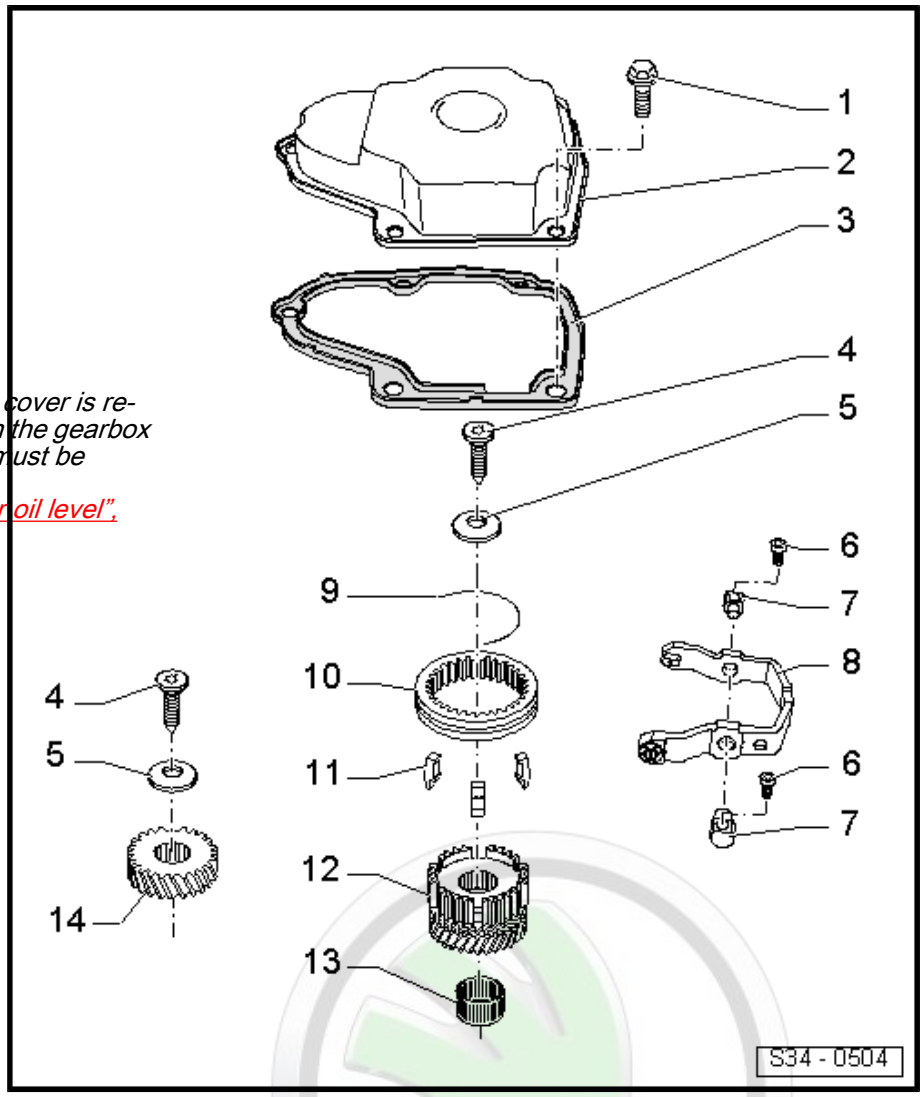
II - Summary of components - Remove and install gearbox housing and shift mechanism
⇒ “4.4 Removing and installing gearbox housing and shift mechanism”, page 162 .

III - Summary of components - Removing and installing the drive shaft, output shaft, differential gear and shift forks
⇒ “4.5 Removing and installing the drive shaft, output shaft, differential gear and shift forks”, page 163 .




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## 4.3 Removing and installing gearbox housing cover and 5th gear




**1 - Screw**

- for cover to gearbox housing
- 18 Nm

**2 - Cover for gearbox housing**

- as of 08.10, with magnet on the inside ⇒ Electronic Catalogue of Original Parts

**Note**

*If the gearbox housing cover is removed and refitted with the gearbox mounted, the gear oil must be drained and refilled ⇒ "3 Checking the gear oil level", page 154 .*

**When removing the cover, ensure that any remaining oil still flows out.**

**Therefore, after fitting the cover, absolutely fill up with 1.8 ltr. of gear oil.**

- If only the 5th gear is to be removed, the following must be observed: during this procedure, the gear oil does not need to be drained. Once the cover is removed, then the cover side of the gearbox must point upwards.

**3 - Seal**

**4 - Screw**

- holds the dished spring in position
- always replace ⇒ Electronic Catalogue of Original Parts
- Clean the threaded holes of the fixing screws for the synchronizer body and the 5th gear pinion using a thread tap in order to remove locking agent residues; otherwise there is a risk that the screws will shear
- 80 Nm + 90°

**5 - Disc spring**

- Fitting position ⇒ page 180

**6 - Screw**

- for bearing pins on the gearbox housing
- 25 Nm

**7 - Bearing bolt**

**8 - 5th gear shift fork**

- Disassembling and assembling ⇒ "7 Disassembling and assembling the gearshift forks", page 191
- Adjust ⇒ page 181

**9 - Spring**

- Fitting position ⇒ "1 Drive shaft", page 194

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**10 - 5th gear sliding sleeve**

- ❑ Fitting position ⇒ “1 Drive shaft”, page 194

**11 - Arresters (3 pieces)**

- ❑ Fitting position ⇒ “1 Drive shaft”, page 194

**12 - Synchronizer body with sliding gear and synchronizer ring for 5th gear**

- ❑ remove separately
  ⇒ “4.6 Mounting sequence - Removing and installing gearbox housing cover and 5th gear”, page 164
- ❑ remove together with the gearbox housing
  ⇒ “4.7 Mounting sequence - completely disassembling and assembling the gearbox”, page 169
- ❑ Disassembling and assembling ⇒ “1 Drive shaft”, page 194

**13 - Needle bearing**

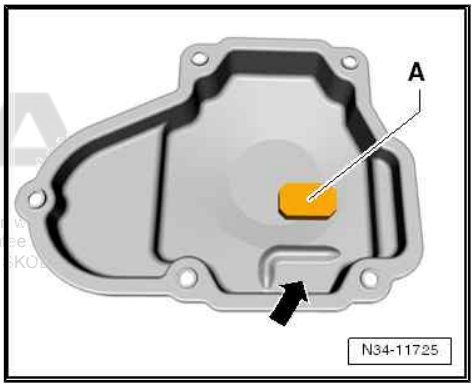
**14 - Gear wheel for 5th gear**

- ❑ remove separately
  ⇒ “4.6 Mounting sequence - Removing and installing gearbox housing cover and 5th gear”, page 164
- ❑ remove together with the gearbox housing
  ⇒ “4.7 Mounting sequence - completely disassembling and assembling the gearbox”, page 169
- ❑ Fitting position ⇒ page 178

**Cover for gearbox housing with magnet -A-**

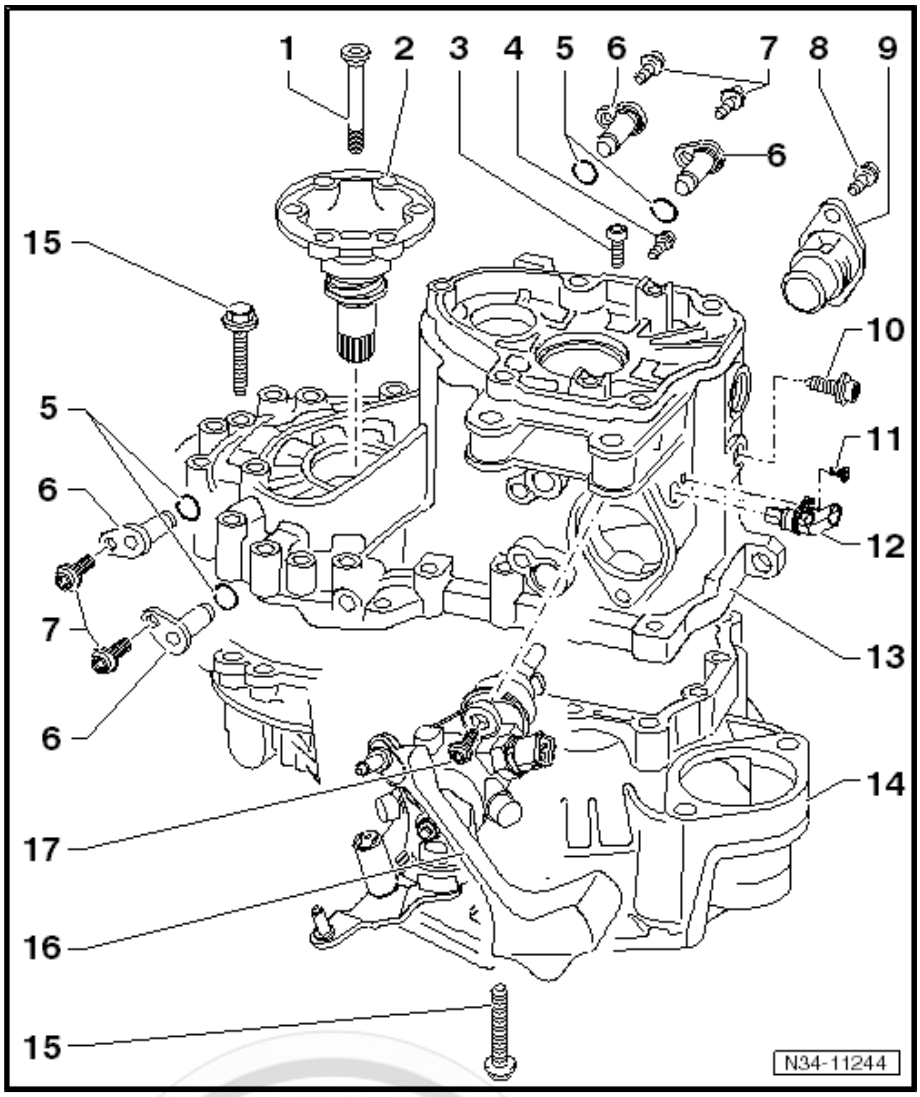
Magnet can only be inserted in the cover with recess -arrow-.

The magnet is held in the correct position on the installed cover by a fixing screw for the carrier bolt of the 5th gear shift fork.




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## 4.4 Removing and installing gearbox housing and shift mechanism




**1 - Screw**
- ❑ 25 Nm

**2 - Flange shaft with pressure spring**
- ❑ Removing and installing ⇒ “1 Replacing gasket rings for flange shafts with gearbox installed”, page 222
- ❑ complete ⇒ “2 Differential”, page 228

**3 - Screw**
- ❑ for reverse shaft support
- ❑ self-locking
- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 25 Nm

**4 - Screw**
- ❑ for reverse shaft support
- ❑ self-locking
- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 30 Nm

**5 - O-ring**
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**6 - Bearing bolt**

**7 - Screw**
- ❑ 25 Nm

**8 - Screw**
- ❑ 25 Nm

**9 - Cover**

**10 - Screw**
- ❑ for reverse shaft support
- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 25 Nm

**11 - Screw**
- ❑ 5 Nm

**12 - Gearbox neutral position transmitter - G701 -**
- ❑ for vehicles with start/stop system

**13 - Gearbox housing**
- ❑ remove together with 5th gear ⇒ “4.7 Mounting sequence - completely disassembling and assembling the gearbox”, page 169
- ❑ repairing ⇒ “5 Repairing gearbox housing and clutch housing”, page 182

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**14 - Clutch housing**

- ❑ repairing ⇒ “5 Repairing gearbox housing and clutch housing”, page 182

**15 - Screw**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 25 Nm + 90°

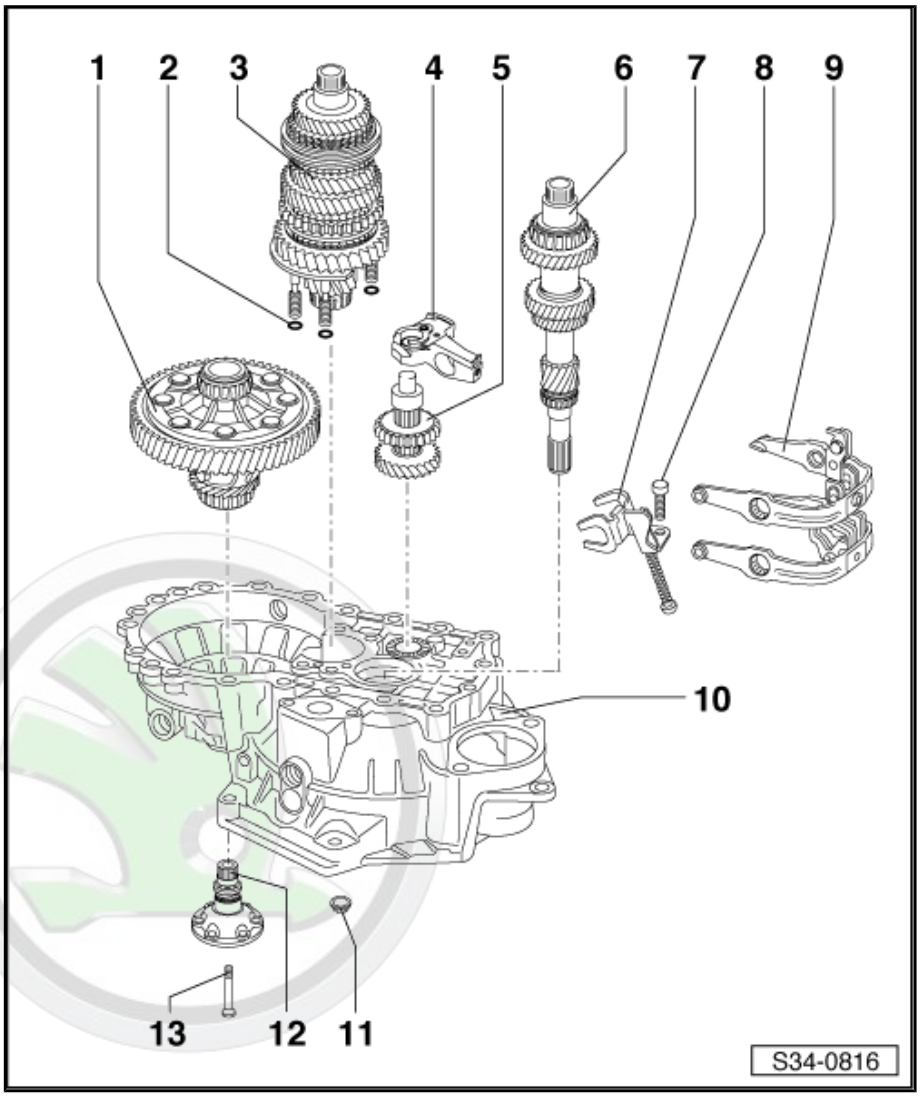
**16 - Shift mechanism**

- ❑ (Gearshift shaft with gearshift cover)
- ❑ repairing ⇒ “6 Repairing the shift mechanism on the gearbox”, page 188

**17 - Screw**

- ❑ 25 Nm

## 4.5 Removing and installing the drive shaft, output shaft, differential gear and shift forks




**1 - Differential**

- ❑ Disassembling and assembling ⇒ “2 Differential”, page 228

**2 - O-ring**

- ❑ 4 units
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**3 - Output shaft**

- ❑ Disassembling and assembling ⇒ “2 Output shaft”, page 205

**4 - reverse shaft support**

- ❑ Disassembling and assembling ⇒ “3 Reverse shaft”, page 219

**5 - Reverse shaft**

- ❑ Disassembling and assembling ⇒ “3 Reverse shaft”, page 219

**6 - Drive shaft**

- ❑ Disassembling and assembling ⇒ “1 Drive shaft”, page 194

**7 - Gearshift fork reverse gear**

- ❑ Disassembling and assembling ⇒ “7 Disassembling and assembling the gearshift forks”, page 191
- ❑ Fitting position ⇒ “4.7.2 Assembling gearbox”, page 175

**8 - Screw**

- ❑ 25 Nm

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**9 - Shift mechanism**

- ❑ (Gearshift forks)
- ❑ Disassembling and assembling ⇒ “7 Disassembling and assembling the gearshift forks”, page 191

**10 - Clutch housing**

- ❑ repairing ⇒ “5 Repairing gearbox housing and clutch housing”, page 182

**11 - Nut**

- ❑ 4 nuts for bearing support
- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 25 Nm + 90°

**12 - Flange shaft with pressure spring**

- ❑ Removing and installing
  ⇒ “1 Replacing gasket rings for flange shafts with gearbox installed”, page 222
- ❑ complete ⇒ “2 Differential”, page 228

**13 - Screw**

- ❑ 25 Nm

## 4.6 Mounting sequence - Removing and installing gearbox housing cover and 5th gear

**Note**

- *If it is intended to only remove the 5th gear, keep to the following work sequence.*
- *For this work sequence, the gear oil must not be drained. Once the cover is removed, then the cover side of the gearbox must point upwards.*
- *When wishing to remove the gearbox housing, this work sequence must be followed: completely disassembling and assembling the gearbox*
  *⇒ “4.7 Mounting sequence - completely disassembling and assembling the gearbox”, page 169* .

**Special tools and workshop equipment required**

- Thrust washer - MP3-402 (VW 244 B)-
- Supporting bridge - MP3-425 (30-211 A)-
- Thrust washer - MP3-456 (VW 447 i)-
- Insertion tool - MP3-466 (32-111)-
- Assembly tool - MP6-414 (3253)-
- Assembly stand - MP9-101-
- Assembly tool - T10030-
- Extractor - T10309-
- Supporting bridge - T10323-
- Gearbox mount - T30108-
- Gearbox mount - T30109 (VW 353)-
- Two-arm extractor - Kukko 20/10- with hook - T10040/2A+/3-
- Hot air blower e.g. -V.A.G 1416-

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♦ Screw M 10 x 20 mm

## 4.6.1 Removing gearbox housing cover and 5th gear

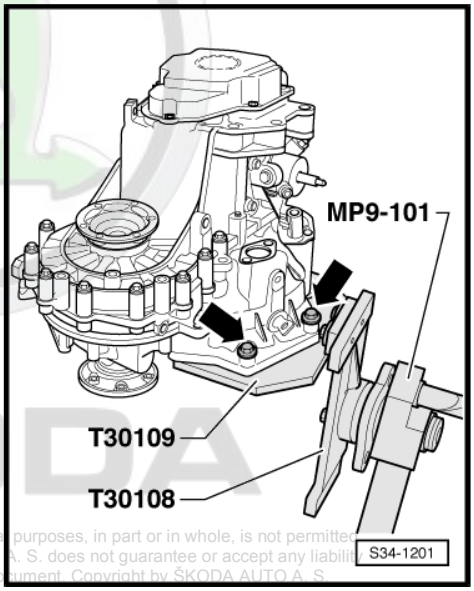
If it is intended to only remove the 5th gear, keep to the following work sequence.

For this work sequence, the gear oil must not be drained. Once the cover is removed, then the cover side of the gearbox must point upwards.

When wishing to remove the gearbox housing, this work sequence must be followed: completely disassembling and assembling the gearbox
⇒ “4.7 Mounting sequence - completely disassembling and assembling the gearbox”, page 169 .

– Secure gearbox to gearbox mount - T30109 (VW 353)- with screws -arrows-.

– Remove clutch release lever with release bearing
⇒ “2 Repairing the clutch release mechanism”, page 63 .




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• When installing 5th gear again, take care not to damage the input shaft and output shaft bearings.

• Therefore, while securing the gearbox to the gearbox mount - T30109 (VW 353)- , the following tools must be installed for support:

**Below the drive shaft:**

♦ Supporting bridge - MP3-425 (30-211 A)-

♦ Insertion tool - MP3-466 (32-111)-

♦ Thrust piece - T10030/4-

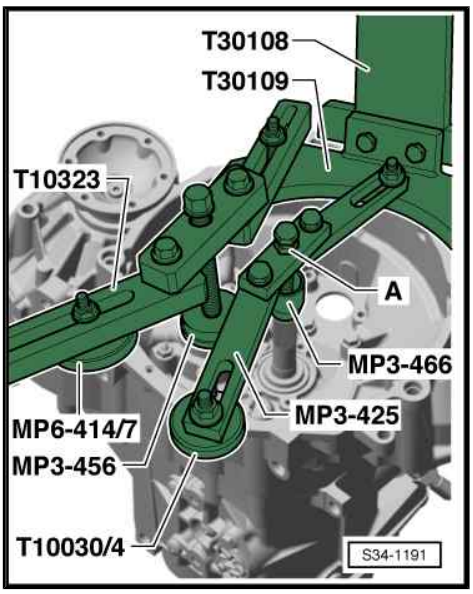
• The drive shaft must only be supported with the insertion tool - MP3-466 (32-111)- at a later stage.

**Below the bearing support for the output shaft:**

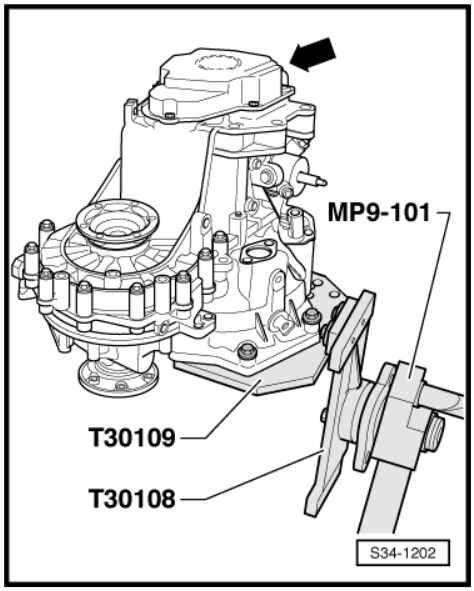
♦ Supporting bridge - T10323-

♦ Pressure plate - MP6-414/7 (3253/7)- from assembly device - MP6-414 (3253)-

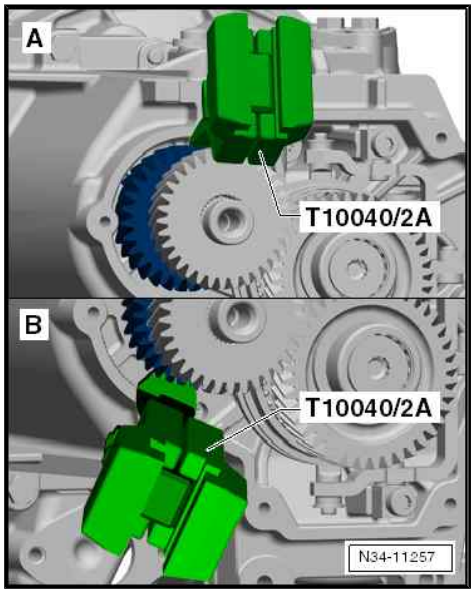
♦ Thrust washer - MP3-456 (VW 447 i)-



– Unscrew the gearbox housing cover -arrow-.




– Check whether the extraction hooks - T10040/2A- can be correctly positioned under the 5th gear pinion.



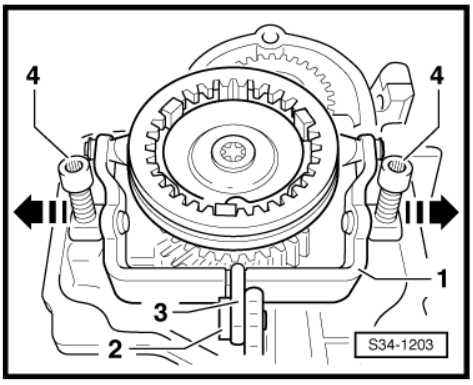

| The extraction hooks - T10040/2A- cannot be correctly positioned. | |
|---|---|
| -A-<br>the extraction hooks - T10040/2A- come prematurely in contact with:<br>♦ the gearbox housing wall<br>♦ the ribbing on the gearbox housing below the gear wheel for 5th gear | “Remove the following together”: “Synchro hub 5th gear”, “Gear 5th gear” and “Gearbox housing”<br>⇒ “4.7 Mounting sequence - completely disassembling and assembling the gearbox”, page 169 |
| -B-<br>the extraction hooks - T10040/2A- come in contact with the ribbing in the gearbox housing below the 5th gear pinion. | |

| The extraction hooks - T10040/2A- can be correctly positioned. |
|---|
| The 5th gear can be removed separately ⇒ page 167 . |

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**Remove 5th gear separately**

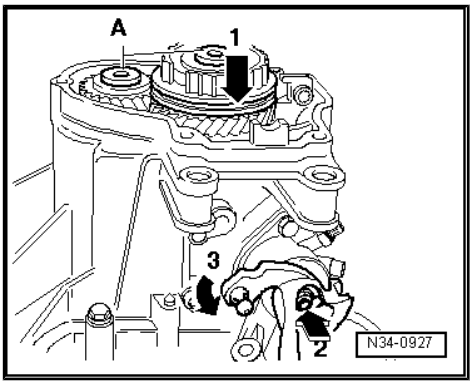
Remove 5th gear shift fork as follows:




– Cover the openings with a cloth.
– Put shift fork -1- in Neutral position.
– Remove screw -2- with 5th gear shift gate -3-.
– Remove screws -4- for the bearing pins.
– Pull out bearing bolts in the -direction of arrow-.
– Remove 5th gear shift fork.

**Note**

*The 5th gear sliding sleeve must not be removed.*




– Unscrew screws -A- for synchronizer body and 5th gear pinion. For this step, engage the 5th gear -arrow 1- and 1st gear -arrows 2- and -3-.

The input and output shafts are blocked after introducing the two gears, the synchronizer body and pinion cannot rotate. Now it is possible to release the two bolts.

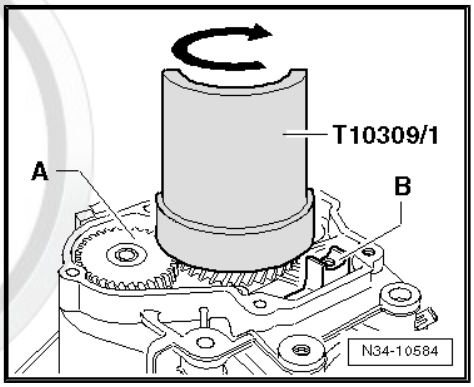
**Note**

*If the shafts are not replaced, carefully clean the threaded holes e.g. using a thread tap to remove locking agent residues.*

**Pull off 5th gear synchronizer body together with sliding sleeve and arresters.**

**Use extractor - T10309- .**

– First of all insert a shell - T10309/1- between the 5th gear pinion -A- and the support of the 5th gear shift fork -B-.

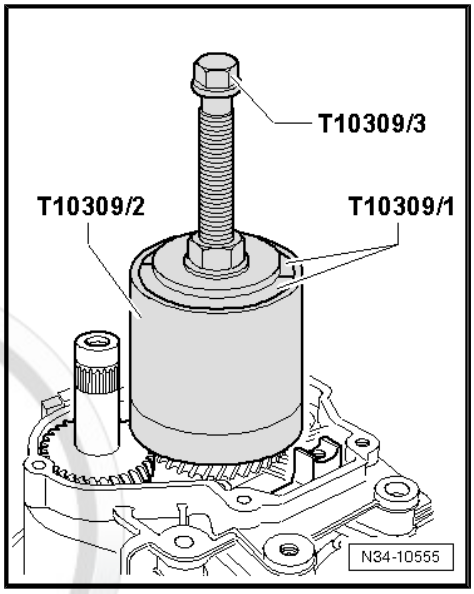



- The shell - T10309/1- must be positioned below the synchronizer ring.

– If necessary, the shell must be pressed into the end position.
– Turn the shell - T10309/1- to the opposite side -direction of arrow-.

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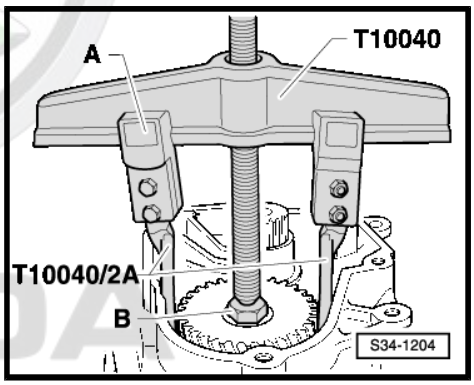
– Insert the threaded insert - T10309/3- into the shell .
– Now insert the second shell - T10309/1- and position the pipe - T10309/2- onto the assembly device.
– Check the synchronizer body for damage after removing.
– Replace 5th gear synchronizer ring.
– Remove the 5th gear sliding gear with needle bearing.




– Pull off the gear wheel for 5th gear as follows:
– First of all insert the extraction hook -A-.

B - Screw M10 x 20, SW 17

– If necessary, heat the gear pinion using the hot-air blower - V.A.G 1416- .




**Note**

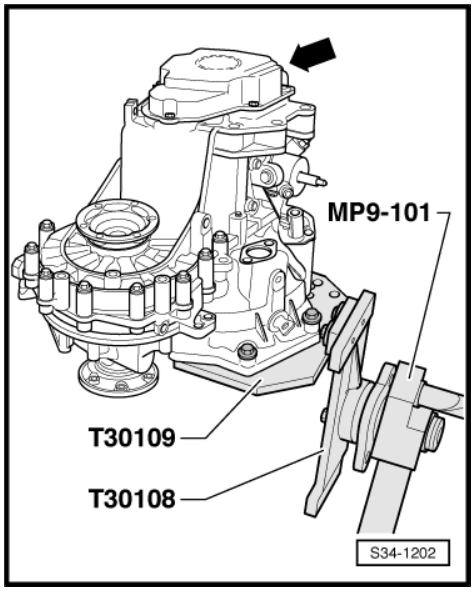
- *The 5th gear pinion can also be removed using the two-arm extractor - Kukko 20/10- in combination with the extraction hooks - T10040/2A- .*
- *When pulling off the gear pinion make sure the hooks do not bend outwards. Check 5th gear for damage after removing.*

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## 4.6.2 Mount 5th gear and cover for gearbox housing

**Install 5th gear** ⇒ “4.7.3 Install 5th gear”, page 178 .

– Mount the cover for the gearbox housing -arrow- and tighten the screws to the specified tightening torque ⇒ “4.3 Removing and installing gearbox housing cover and 5th gear”, page 160 .
– Mount clutch release lever with release bearing ⇒ “2 Repairing the clutch release mechanism”, page 63 .
– Check gear oil, top up if necessary ⇒ “3 Checking the gear oil level”, page 154 .



## 4.7 Mounting sequence - completely disassembling and assembling the gearbox

**Removing and installing cover for gearbox housing, clutch housing, gearshift shaft with gearshift cover, drive shaft, output shaft, differential and gearshift mechanism**

**Special tools and workshop equipment required**

- Driver - MP1-304 (10-206)-
- Thrust washer - MP3-402 (VW 244 B)-
- Supporting bridge - MP3-425 (30-211 A)-
- Thrust washer - MP3-456 (VW 447 i)-
- Insertion tool - MP3-466 (32-111)-
- Assembly tool - MP6-414 (3253)-
- Assembly stand - MP9-101-
- Assembly tool - T10030-
- Supporting bridge - T10323-
- Extractor plate - T10408-
- Thrust piece (2 pieces) - T10408/2-
- Spacer (5 pieces) - T10408/1-
- Hanger (2 pieces) - T10408/3-
- Gearbox mount - T30108-
- Gearbox mount - T30109 (VW 353)-
- Extractor (2 units) e.g. -Kukko 18/1-
- Hot air blower e.g. -V.A.G 1416-
- Sealant - AMV 188 200 03-
- Bolts M 8 x 100 mm

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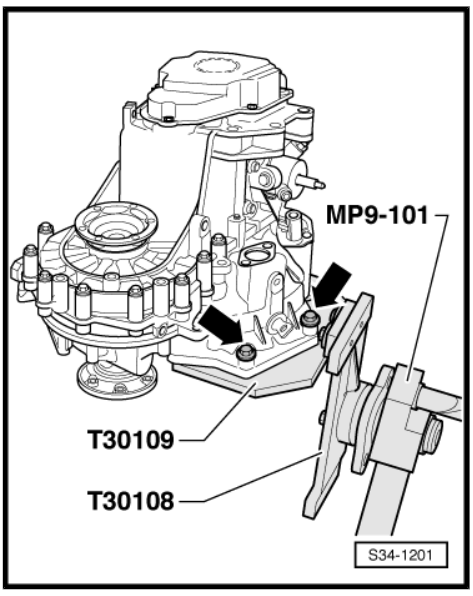
### 4.7.1 Disassembling gearbox

– Secure gearbox to gearbox mount - T30109 (VW 353)- with screws -arrows-.

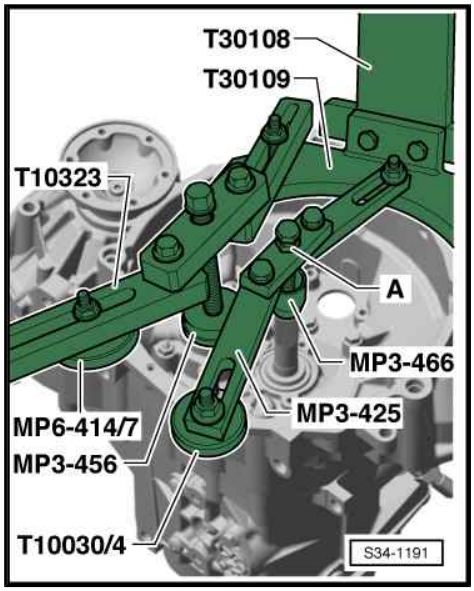
– Place catch pan underneath.

– Drain out gear oil ⇒ “3.1 Draining out gear oil”, page 154 .

– Remove the clutch release lever together with the clutch release bearing and the guide bushing
⇒ “2 Repairing the clutch release mechanism”, page 63 .



- The bearing of the input shaft and of the output shaft must not be damaged when removing and installing the 5th gear.
- Therefore, while securing the gearbox to the gearbox mount - T30109 (VW 353)- , the following tools must be installed for support:




**Below the drive shaft:**

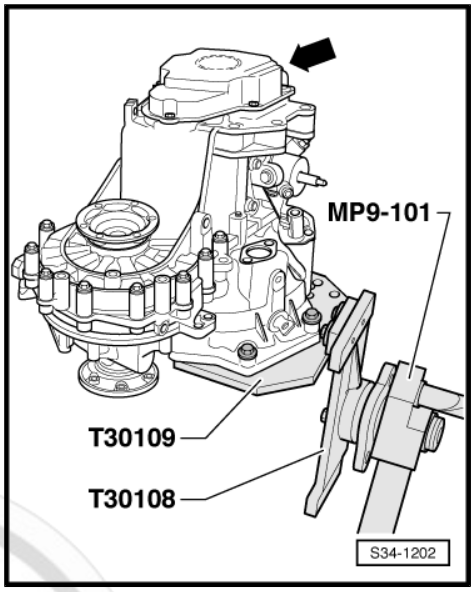
- ♦ Supporting bridge - MP3-425 (30-211 A)-
- ♦ Insertion tool - MP3-466 (32-111)-
- ♦ Thrust piece - T10030/4-
- Lock the screw of the supporting bridge - MP3-425 (30-211 A)- with the nut -A-.

**Below the bearing support for the output shaft:**

- ♦ Supporting bridge - T10323-
- ♦ Pressure plate - MP6-414/7 (3253/7)- from assembly device - MP6-414 (3253)-
- ♦ Thrust washer - MP3-456 (VW 447 i)-

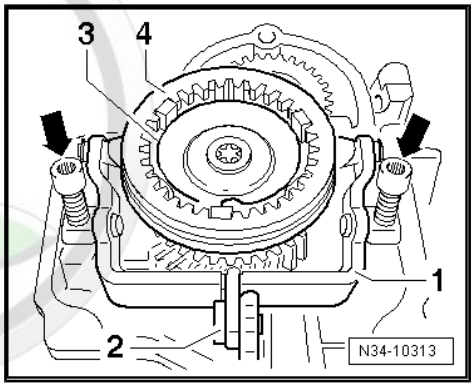
– Unscrew the gearbox housing cover -arrow-.

**Remove 5th gear shift fork**




– Put shift fork -1- in Neutral position.
– Remove screw -2- with the shift gate for the 5th gear.
– Unscrew both screws -arrows- for the bearing pins.
– Pull out bearing bolt.
– Remove 5th gear shift fork.

Spring -3- and the sliding sleeve -4- must not be removed.



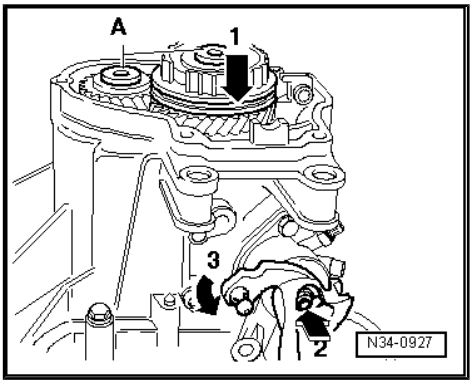

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– Unscrew screws -A- for synchronizer body and 5th gear pinion.

• For this step, engage the 5th gear -arrow 1- and 1st gear -arrows 2- and -3-.

• The input and output shafts are blocked after engaging both gears. Synchronizer body and pinion cannot rotate. Now it is possible to release the two bolts.

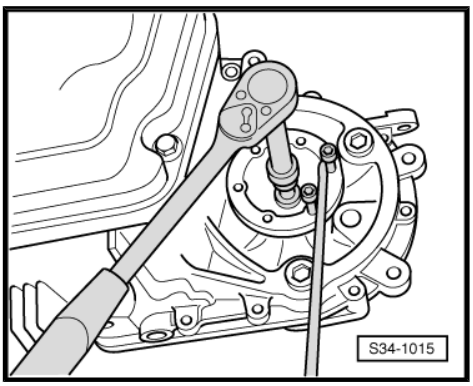
• If the shafts are not replaced, carefully clean the threaded holes e.g. using a thread tap to remove locking agent residues.



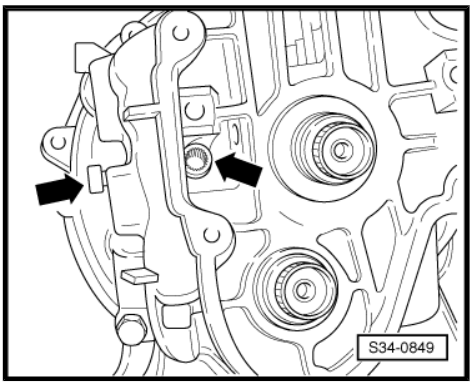

– Remove both flange shafts.

• To do so secure the flange shaft e.g. with the assembly lever to prevent it from turning and release screw.

– Remove flange shafts with pressure springs, thrust washers and conical rings.

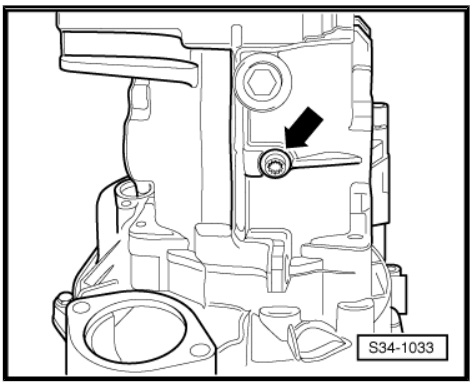



– Remove both screws -arrows- for reverse shaft support.



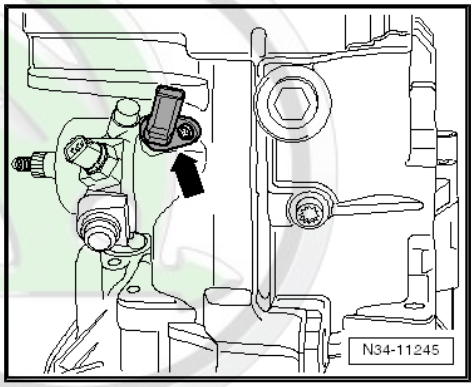

– Remove the 3rd screw -arrow- for reverse shaft support.

**For vehicles with start/stop system**




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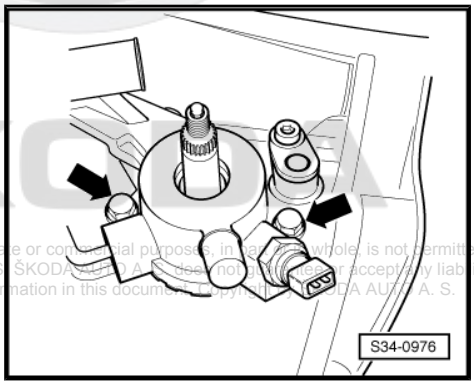
– Remove transmission neutral sender - G701- -arrow-.




**Continued for all vehicles**

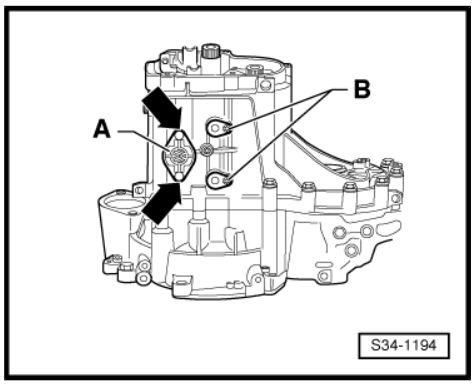
– Remove gearshift shaft with cover. Put the gearshift shaft into Neutral. Subsequently unscrew screws -arrows- and remove the gearshift shaft from the gearbox housing.

– Unscrew the fixing screws for the selector unit -arrows- and remove the gearshift shaft from the gearbox housing.

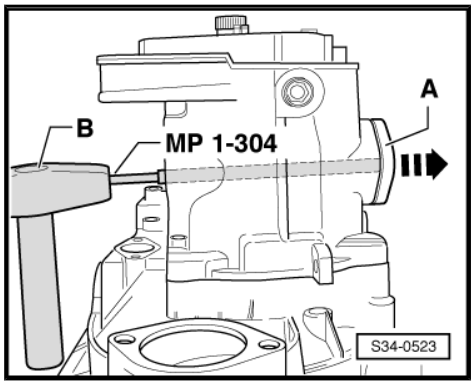



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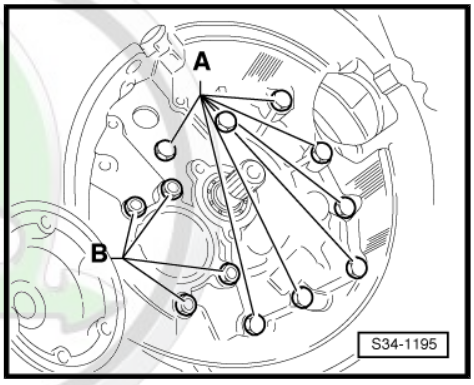
– Remove screws -arrows- from the cap -A- and the bearing pins -B- at the bottom of the gearbox.




– Carefully remove the screw cap -A- with driver -MP1-304 - and hammer -B-.



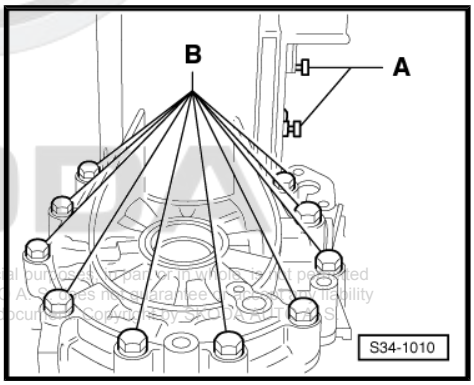
– Release screws -A-, that serve to secure the gearbox housing from the clutch housing.




**Note**

*Do not remove nuts -B- for the output shaft bearing support.*

– Remove bearing pins -A- on the top side of the gearbox and fixing screws -B- for the gearbox housing on the clutch housing near the differential gear.



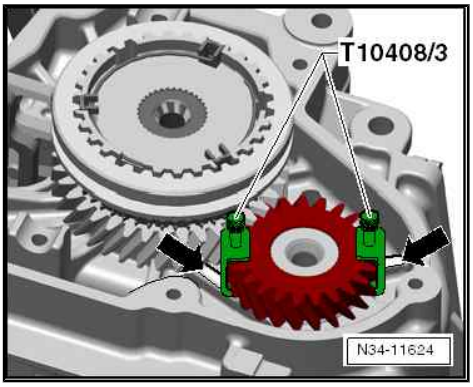

**Remove the gearbox housing with the 5th gear pinion and synchronizer body for the 5th gear.**

Detach the gearbox housing in such a way that it does not come in contact with the 5th gear pinion and attach the hangers.

The needle bearing is located under the 5th gear pinion.

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- Always attach the hangers above the recesses of the housing opposite each other -arrows-.




– Position extractor plate - T10408- with the indicated tools as shown in the illustration.

♦ Spacers - T10408/1- (5 pieces)

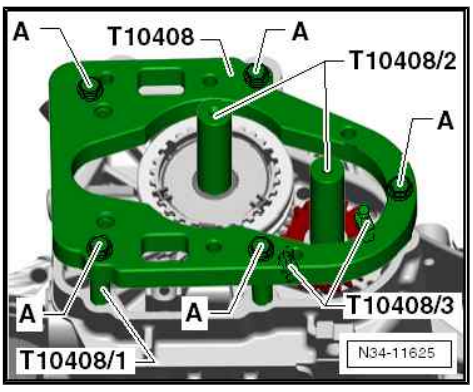
♦ Pressure pieces - T10408/2 - (2 pieces)

♦ Hangers - T10408/3 - (2 pieces)

♦ Extractors Kukko 18/1 (2 pieces)

A - Screws M7 x 35 with washers

Tightening torque - 18 Nm




– Tighten the 5° spacers - T10408/1- in the threaded bores of the cover for the gearbox housing.

– Screw the extractor plate - T10408- on the spacers - T10408/1- .

– Position the pressure pieces - T10408/2- onto the shafts.

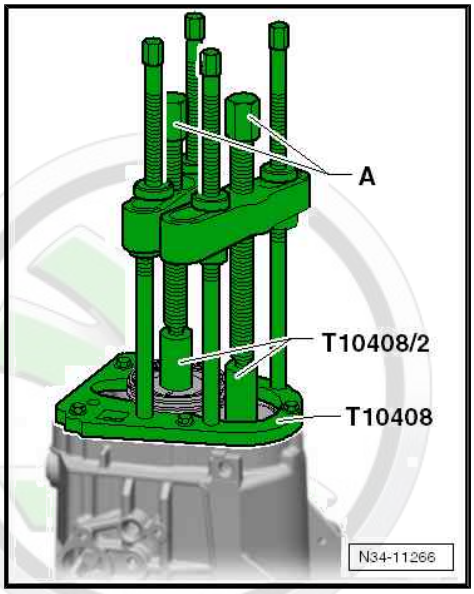
– Install the extractor -A-, e.g. -Kukko 18/1- .

– Remove 5th gear synchronizer body, 5th gear pinion and gearbox housing by alternatively tightening the spindles -A- ($^1/_2$ turn) of the extractors .

If needed, heat the gear wheel for 5th gear with a hot air blower , e.g., -V.A.G 1416- .

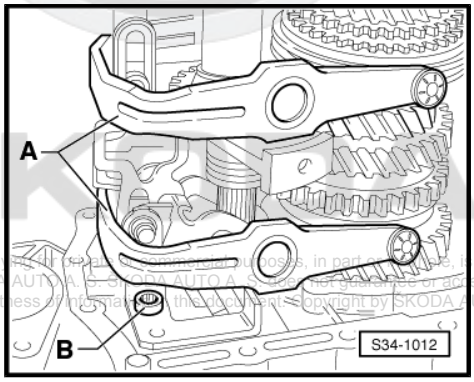
– Check the securing mechanism for the needle bearing/output shaft.

• If the 3 caulks to secure the securing mechanism are damaged, the needle bearing has shifted during removal and must be replaced
⇒ “5 Repairing gearbox housing and clutch housing”, page 182 .



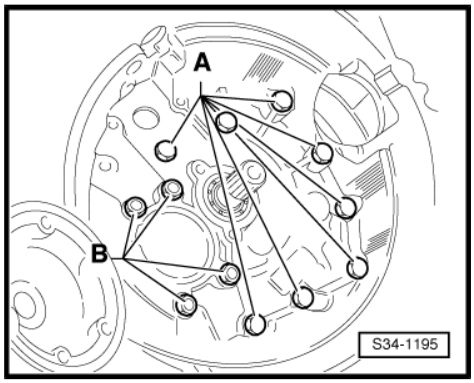

– Remove shift forks -A- together with shift rails.

– Unscrew shift mechanism/reverse gear -B-.



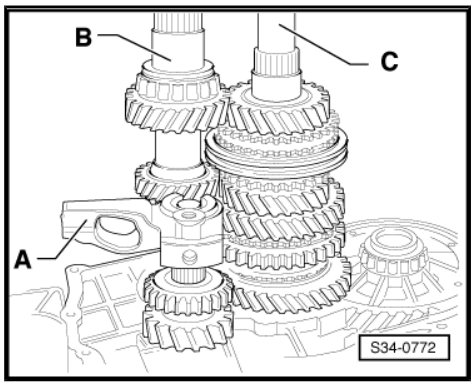

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– Release nuts -B- for the bearing support/output shaft.




– Successively remove the reverse gear -A-, drive shaft -B- and output shaft -C- from the clutch housing.

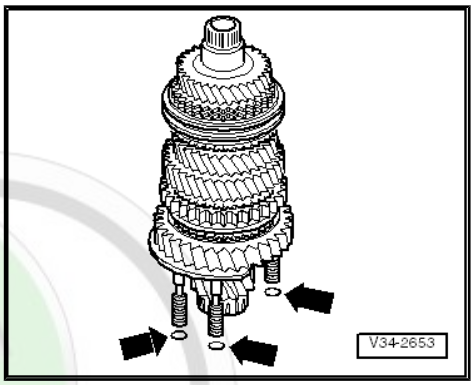
– Remove differential gear.



## 4.7.2 Assembling gearbox

– Insert differential gear.

– Always replace O-rings -arrows- for bearing support/output shaft ⇒ Electronic Catalogue of Original Parts .




**Note**

*The figure only shows 3 of the 4 O-rings.*

– Insert together the drive shaft -1- and the drive shaft -2-.

– Tighten nuts for the bearing support/output shaft to the specified torque.

– Position the reverse pinion -3- on the needle bearing in the clutch housing.

• The shoulder -arrow- points away from the clutch housing.

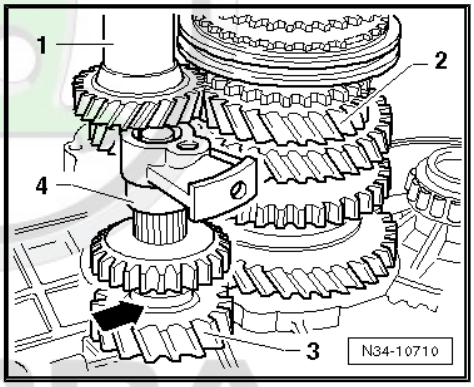
– Check when the reverse shaft -4- is complete ⇒ “3 Reverse shaft”, page 219 .

• Do not position the reverse shaft support on the reverse shaft at this stage.

– Insert the reverse shaft in the clutch housing.

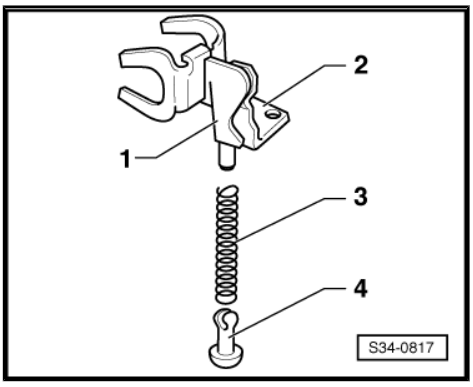
– Clean all threaded holes in the reverse shaft support to remove locking agent; clean with a screw-tap.

– Position reverse shaft support on the reverse shaft.

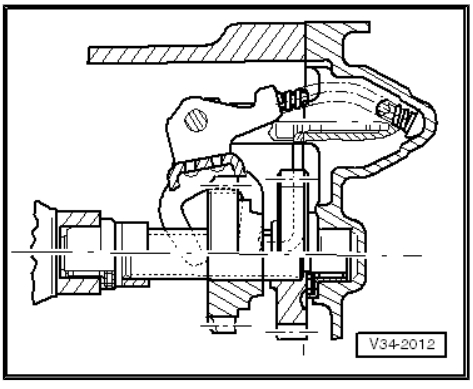



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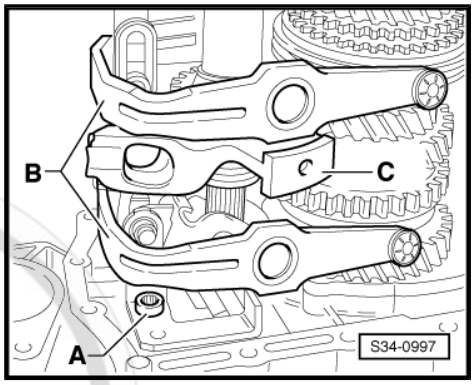
– Install the reverse gear shift fork -1- with the support for reverse gear shift fork -2-, the spring -3- and the sliding shoe -4-.



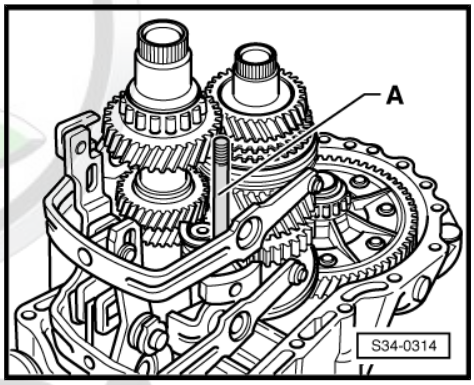

Fitting location of reverse gear



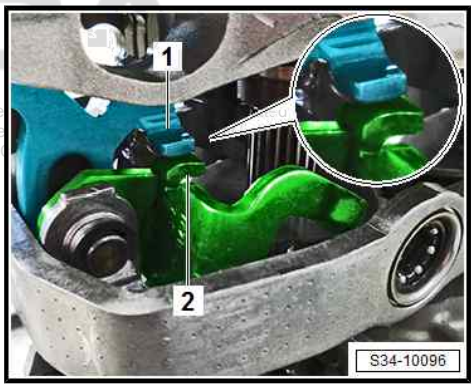
– Screw on shift mechanism/reverse gear -A- and tighten to the specified tightening torque.
– Install shift forks -B- together with shift rails.
• The shift forks must be positioned in the slots of the sliding sleeves.
• The stud -C- of the reverse shaft support is located in front of the shift rails.




– Screw the pin screw -A- M8 x 100 mm in the reverse shaft support, to ensure it is aligned once the gearbox housing has been fitted.
– Align shift rails.




– Interleave the stops of the shift forks -1- and -2- as shown in the figure.
• The shift forks must be positioned in the slots of the sliding sleeves.
• Note the positions of the stops of the shift forks (figure S34-10096).
– Apply sealant - AMV 188 200 03- uniformly on the sealing surface of the clutch housing.
– Position the gearbox housing and tighten connecting screws to the given tightening torque.

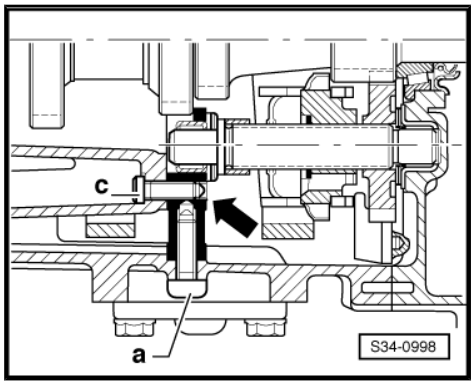



Insert the screws for the reverse shaft support -arrow- as follows:

– Insert screw -a-, release pin screw M8 x 100 mm (⇒ fig. S34-0314) from the reverse shaft support, insert screw -b- and -c-.

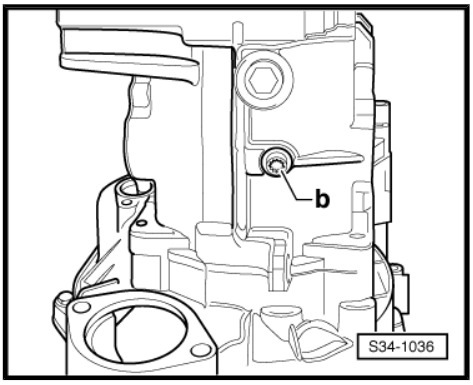
Tightening sequence:

1 - Screw -a- 30 Nm
2 - Screw -b- 25 Nm ⇒ fig. S34-1036
3 - Screw -c- 25 Nm

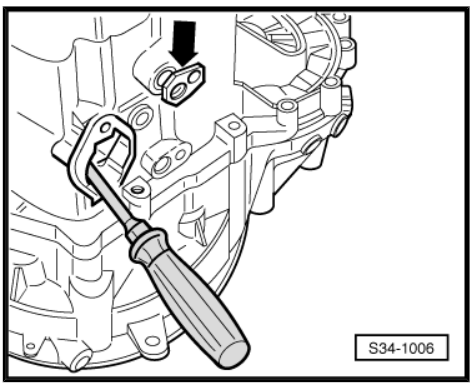



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– Tighten screw -b- for support reverse shaft.



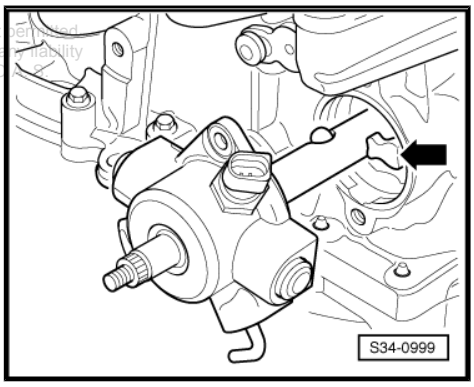

– Fit bearing pins -arrow- for shift forks. Align the shift mechanism with a screwdriver to ensure the relevant bearing pin can be fitted.
– Apply sealant - AMV 188 200 03- uniformly on the sealing surface of the screw cap.
– Install the cover for the gearbox housing .




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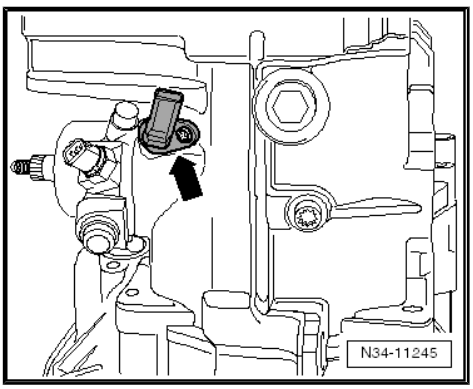
Install the gearshift shaft with cover as follows:

– Put the shift rails in neutral position.
– Apply sealant - AMV 188 200 03- uniformly on the sealing surface of the gearshift cover.
– Put the gearshift shaft into Neutral.
– Align the gearshift shaft in such a way that the shift finger -arrow- is inserted in the shift rails.
– Position the gearshift cover with gearshift shaft and tighten the screws to the specified tightening torque.




**Vehicles with start-stop system**

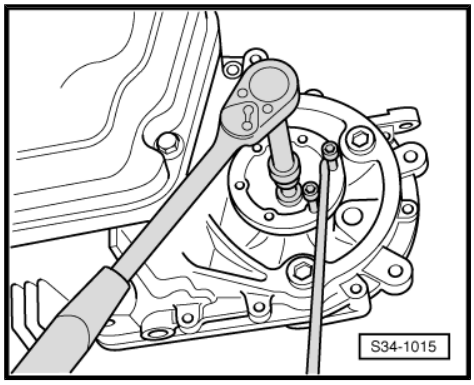
– Install transmission neutral sender - G701- -arrow- and tighten fixing screw to the specified tightening torque.




**Continued for all vehicles**

– Install both flange shafts with pressure springs, stop discs and conical rings.

• Pour in gear oil ⇒ “3 Checking the gear oil level”, page 154




**Tightening torques**

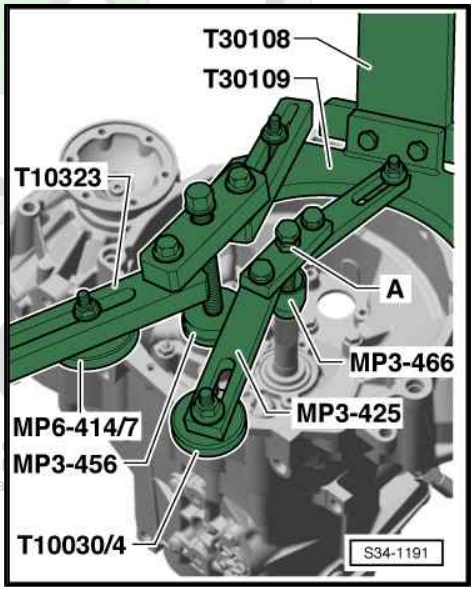
- Gearbox housing ⇒ “4.3 Removing and installing gearbox housing cover and 5th gear”, page 160
- Screw for shift mechanism/reverse gear ⇒ “4.4 Removing and installing gearbox housing and shift mechanism”, page 162
- Screws for gearshift cover ⇒ “4.4 Removing and installing gearbox housing and shift mechanism”, page 162 .
- Screw for gearbox neutral position sender - G701- ⇒ “4.4 Removing and installing gearbox housing and shift mechanism”, page 162 .
- Nuts for bearing support/output shaft ⇒ “4.5 Removing and installing the drive shaft, output shaft, differential gear and shift forks”, page 163

## 4.7.3 Install 5th gear

• When installing 5th gear again, take care not to damage the input shaft and output shaft bearings.

• Make sure that the supporting bridge - MP3-425 (30-211 A)- and the supporting bridge - T10323- are installed.

– Lock the screw of the supporting bridge - MP3-425 (30-211 A)- with the nut -A-.

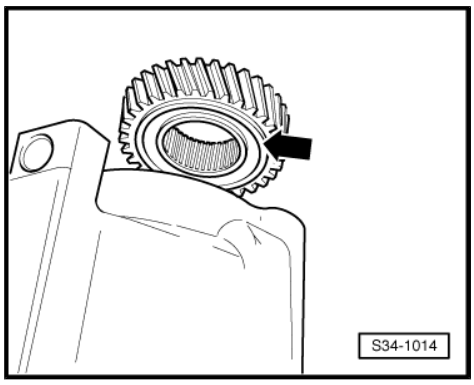



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**Fitting position of the 5th gear pinion**

The round slot -arrow- points to the gearbox housing.

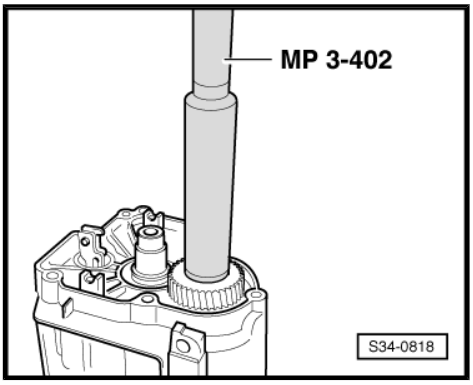
– Heat pinion to approx. 100 °C.




**WARNING**

*Wear protective gloves!*

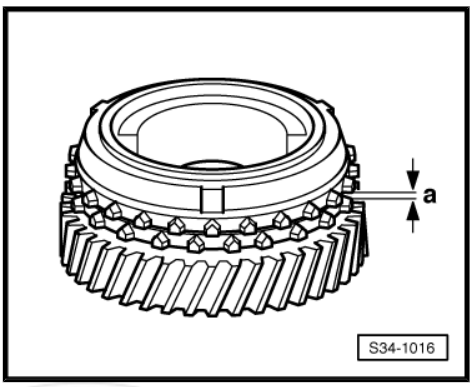
– Drive in 5th gear pinion




### Checking 5th gear synchronizer ring for wear

– Press the synchronizer ring on the cone of the sliding gear and measure the clearance -a- with a feeler gauge before installing the sliding gear and the 5th gear snychronizer ring.

| | Installation dimension | Wear limit |
|---|---|---|
| Dimension -a- | 1.1 … 1.7 mm | 0.5 mm |




– Mount the 5th gear sliding gear with needle bearing.

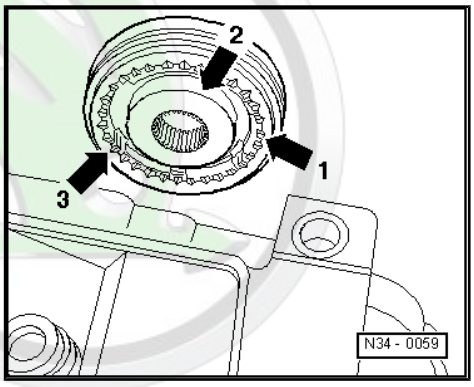
– Position the 5th gear synchronizer ring on the sliding gear.

– If disassembled, assemble the 5th gear synchronizer body/ sliding sleeve before installation
⇒ “1.1 Disassembling and assembling the drive shaft”, page 194 .

### Fitting position of the 5th gear synchronizer body/sliding sleeve

The sharp teeth of the sliding sleeve -arrow 1- and the high collar of the synchronizer body -arrow 2- point towards the gearbox housing.

The supports -arrow 3- of the synchronizer body are on the same line as the integrated arresters of the synchronizer ring (arrows in Fig. N35-0018 ⇒ page 179 ).



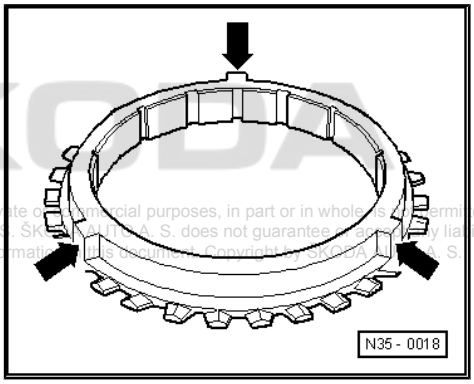

### 5th gear synchronizer ring with integrated arresters -arrows-

– Cover all openings with a cloth so that no foreign bodies can get into the gearbox.

– Heat 5th gear synchronizer body to approx. 100 °C.

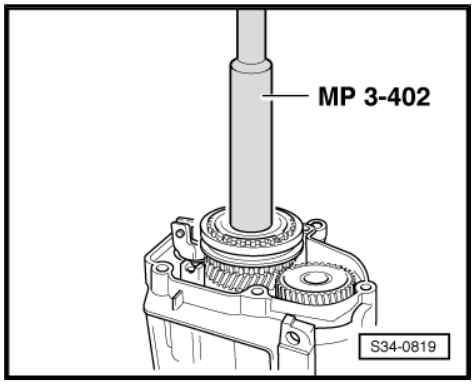
**WARNING**

*Wear protective gloves!*




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– Drive in 5th gear synchronizer body/sliding sleeve.

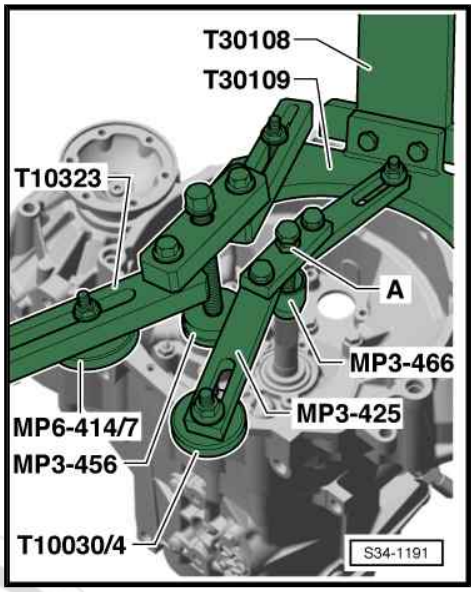



**Note**

*Ensure that the synchronizer ring has clearance when it is driven in.*

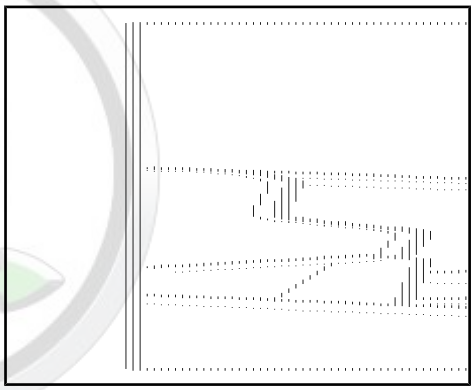
– Remove supporting bridge - MP3-425 (30-211 A)- and supporting bridge - T10323- .

If it is not yet performed, clean the threaded holes of the fixing screws -A- for the 5th gear synchroniser body and the 5th gear pinion e.g. using a screw-tap in order to remove locking agent residues. Otherwise there is a risk that the screws will shear.

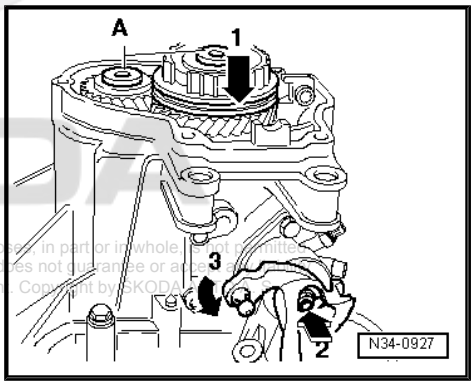



**Fitting position of the disc springs for fixing screws on the 5th gear pinion and synchronizer body**

The curved side (concave side) -arrows- points to the screw head.



– Screw in new screws -A- for the synchronizer body and the 5th gear pinion and tighten to tightening torque ⇒ “4.3 Removing and installing gearbox housing cover and 5th gear”, page 160 . For this step, engage the 5th gear -arrow 1- and 1st gear -arrows 2- and -3-.

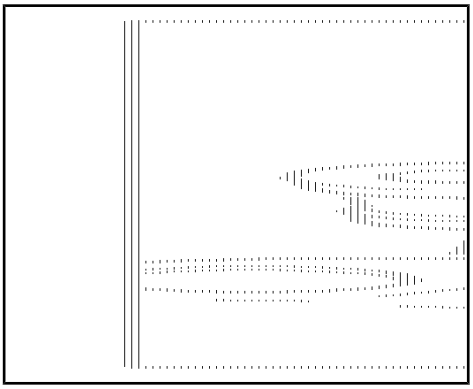



The input and output shafts are blocked after introducing the two gears, the synchronizer body and 5th gear pinion cannot rotate. Now it is possible to tighten the two bolts.

– Install 5th gear shift fork and 5th gear shift gate.

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**Set 5th gear as follows:**



- Engage 5th gear.
- Release screw -1-. Press the sliding sleeve and the gear shift gate in the -direction of the arrow-.
- Tighten screw -1- to tightening torque
  ⇒ “7 Disassembling and assembling the gearshift forks”, page 191 .
- Control measurement with 5th gear engaged: A feeler gauge 0.2 mm cannot be inserted between the sliding sleeve and the control gear. If necessary, repeat the adjustment procedure.
- Remove 5th gear. The sliding sleeve must now be in Neutral. The 5th gear synchronizer ring must move freely.
- Shift through all gears consecutively.
- Mount cover for gearbox housing
  ⇒ “4.3 Removing and installing gearbox housing cover and 5th gear”, page 160 .
- Installing the guide bushing for clutch release lever and clutch release bearing
  ⇒ “2 Repairing the clutch release mechanism”, page 63 .
- Top up with gear oil (Octavia II)
  ⇒ “2.2 Install gearbox (Octavia II)”, page 134 .
- Top up with gear oil (Superb II)
  ⇒ “2.4 Install gearbox (Superb II)”, page 143 .
- Top up with gear oil (Yeti)
  ⇒ “2.6 Installing gearbox (Yeti)”, page 151 .

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# 5 Repairing gearbox housing and clutch housing

**Special tools and workshop equipment required**

- Drift - MP3-403 (VW 295)-
- Adapter - MP3-403/1 (VW 295 A)-
- Gearbox mount for assembly stand MP 9 - 101 - MP3-501-
- Thrust washer - MP3-455 (VW 447 H)-
- Thrust washer - MP3-460 (VW 512)-
- Pipe section - MP3-450 (VW 415 A)-
- Thrust piece - MP3-411 (VW 454)-
- Assembly device - MP3-434 (3066)- (spindle of assembly device)
- Thrust piece - T10148- (Gearbox version: sealing ring and sleeve as one component)

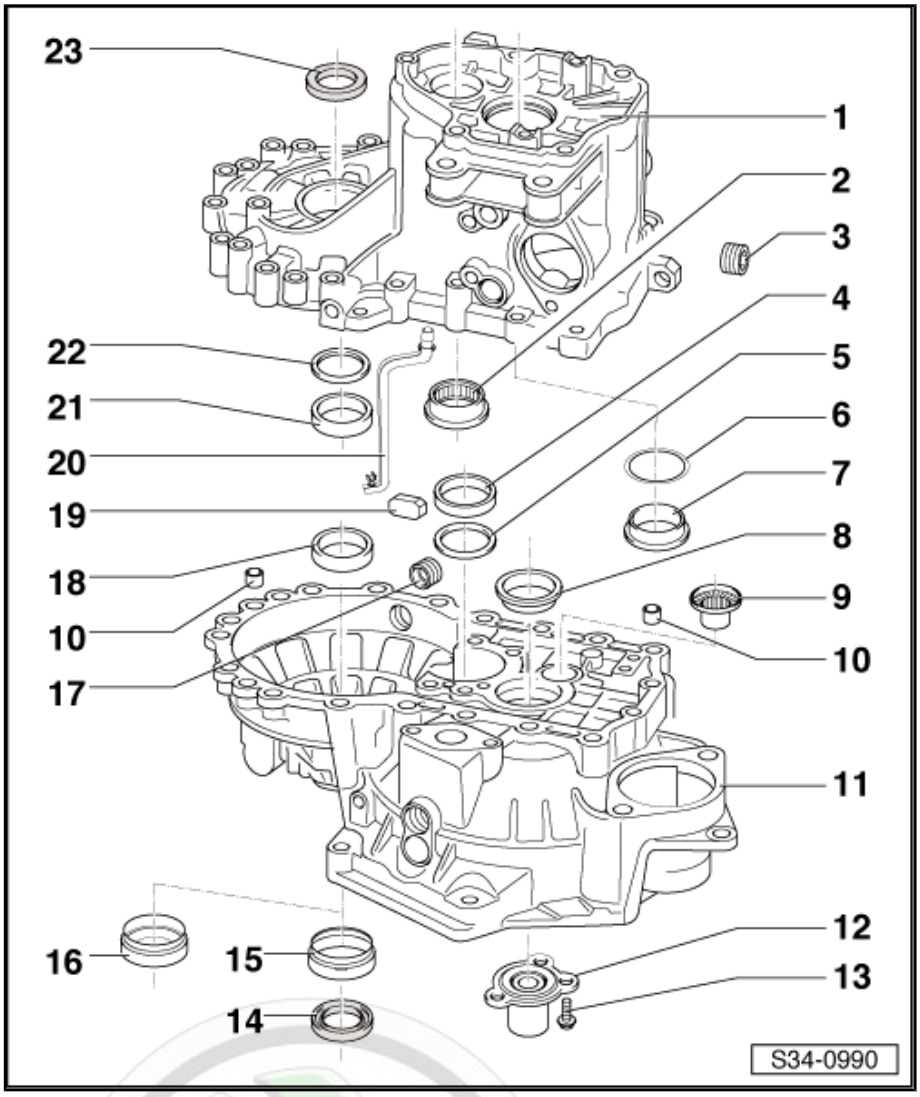
Gearbox version: sealing ring and sleeve as two components

- Thrust piece - MP3-420 (3124)-

Gearbox version: sealing ring and sleeve as one component

- Multi-purpose tool - MP3-419 (VW 771)-

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**1 - Gearbox housing**

- ❑ When replacing: adjust the drive shaft ⇒ “1.2 Setting drive shaft”, page 200 and the differential ⇒ “2.2 Adjusting the differential”, page 234

**2 - Needle bearing**

- ❑ for output shaft
- ❑ extracting ⇒ page 185
- ❑ fitting and securing ⇒ page 185

**3 - Oil filler plug**

- ❑ without magnet
- ❑ the gear oil level can no longer be checked by unscrewing this plug ⇒ “3 Checking the gear oil level”, page 154
- ❑ if the gearbox was disassembled, it must be filled before installing ⇒ “3.2 Pour in gear oil”, page 155
- ❑ 30 Nm

**4 - Outer ring/tapered-roller bearing**

- ❑ for output shaft
- ❑ Removing and installing ⇒ “2.1 Disassembling and assembling the output shaft”, page 205
- ❑ when replacing, adjust the output shaft ⇒ “2.2 Setting output shaft”, page 215

**5 - Adjusting washer**

- ❑ for output shaft
- ❑ Setting overview ⇒ “3 Setting overview”, page 237

**6 - Adjusting washer**

- ❑ for drive shaft
- ❑ Setting overview ⇒ “3 Setting overview”, page 237

**7 - Outer ring/tapered-roller bearing**

- ❑ for drive shaft
- ❑ Removing and installing ⇒ “1.1 Disassembling and assembling the drive shaft”, page 194
- ❑ when replacing: adjust the drive shaft ⇒ “1.2 Setting drive shaft”, page 200

**8 - Outer ring/tapered-roller bearing**

- ❑ for drive shaft
- ❑ Removing and installing ⇒ “1.1 Disassembling and assembling the drive shaft”, page 194
- ❑ when replacing: adjust the drive shaft ⇒ “1.2 Setting drive shaft”, page 200

**9 - Sleeve for needle bearing**

- ❑ Removing and installing ⇒ “3 Reverse shaft”, page 219

**10 - Fitting sleeve**

- ❑ (2 pieces)

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**11 - Clutch housing**

- When replacing: Setting overview ⇒ “3 Setting overview”, page 237

**12 - Guide bushing with O-ring**

- with gasket ring for drive shaft and vulcanized O-ring
- Driving out gasket ring ⇒ page 185
- Driving in gasket ring ⇒ page 185
- if O-ring is damaged, replace guide bushing and O-ring together ⇒ Electronic Catalogue of Original Parts

**13 - Screw**

- self-locking
- always replace
- 20 Nm

**14 - Sealing ring**

- for right flange shaft
- gasket ring and bushing Pos. 15 as two components
- Replace ⇒ “1.3 Replace gasket ring in separated version for right flange shaft”, page 223
- Difference ⇒ “1.2 Difference between the gasket rings with right flange”, page 223

**15 - Bushing**

- for gasket ring Pos.14
- levering out ⇒ page 186
- inserting ⇒ page 186

**16 - Sealing ring and bushing as one component.**

- replace gasket ring and bushing together in the event of damage to the gasket ring
  ⇒ “1.4 Replace gasket ring in single version (together with bushing) for right flange shaft”, page 225
- removing ⇒ page 186
- installing ⇒ page 186
- Difference ⇒ “1.2 Difference between the gasket rings with right flange”, page 223

**17 - Oil drain plug**

- without magnet
- 30 Nm

**18 - Outer ring/tapered-roller bearing**

- for differential
- pressing in and pressing out ⇒ “2.1 Disassembling and assembling differential gear”, page 228
- when replacing, adjust the differential gear ⇒ “2.2 Adjusting the differential”, page 234

**19 - Magnet**

- is held in position by the separator surface of the housing

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**20 - Oil drip pan**

- Install oil drip pan in the gearbox housing ⇒ page 187

**21 - Outer ring/tapered-roller bearing**

- for differential
- pressing in and pressing out ⇒ “2.1 Disassembling and assembling differential gear”, page 228
- when replacing, adjust the differential gear ⇒ “2.2 Adjusting the differential”, page 234

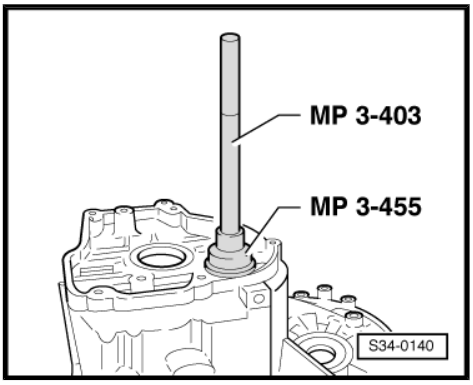
**22 - Adjusting washer**

- for differential
- Setting overview ⇒ “3 Setting overview”, page 237

**23 - Sealing ring**

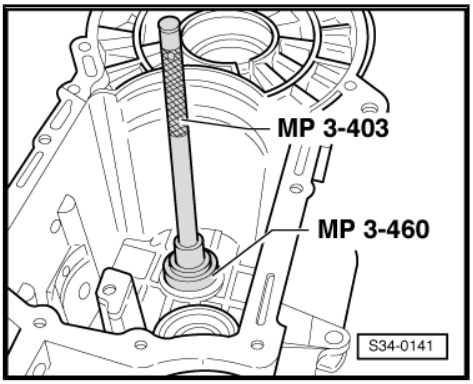
- for left flange shaft
- Replace ⇒ “1.1 Replacing the left flange shaft sealing ring”, page 222

### Driving out needle bearing

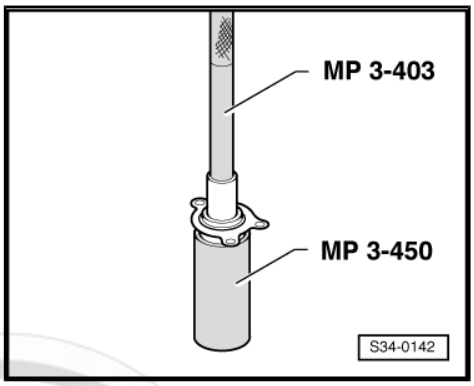



### Drive in needle bearing up to stop

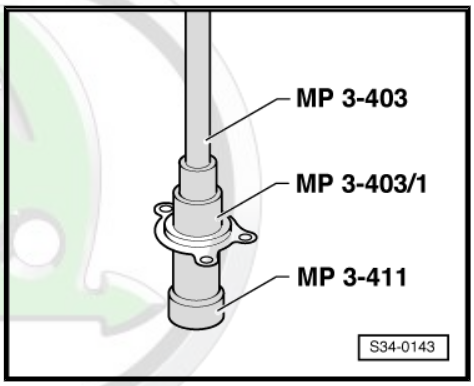
– Using a drift secure needle bearing in 3 points in the gearbox housing with 120° offset.




### Driving out the guide bushing

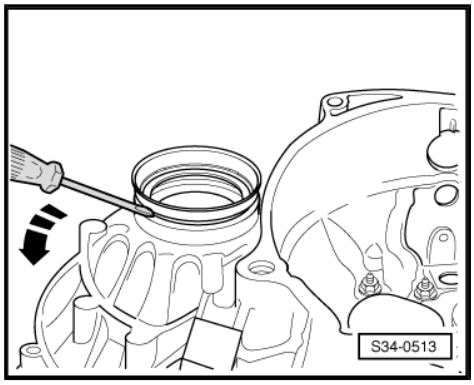



### Driving the gasket ring into the guide bushing up to the stop




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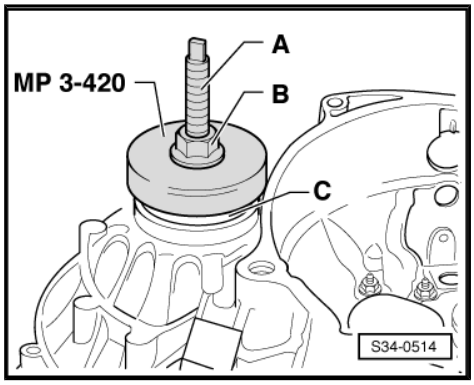
**Levering out the bushing with a screwdriver -arrow-**




**Inserting the bushing**

– Screw spindle -A- of assembly device - MP3-434 (3066)- into the threaded part of the differential gear.

– By turning the nut -B- insert the bushing -C- over the pressure plate - MP3-420 (3124)- up to the stop.




**Note**

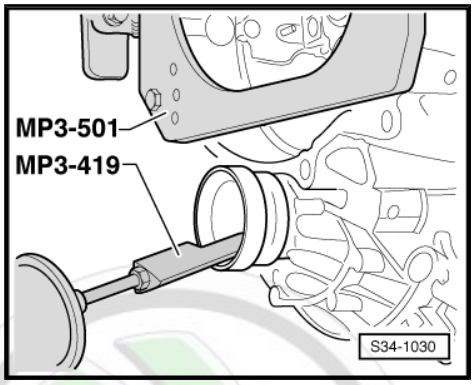
*If the gearbox is disassembled press the bushing with pressure plate - MP3-420 (3124)- up to the stop.*

**Remove bushing and sealing ring**

A shoulder is located in the inner diameter of the bushing.

– To pull out the sealing ring and the bushing insert multi-purpose tool - MP3-419 (VW 771)- at the shoulder into the bushing.

– Push-in forcefully the multi-purpose tool - MP3-419 (VW 771)- into the bushing when pulling out.



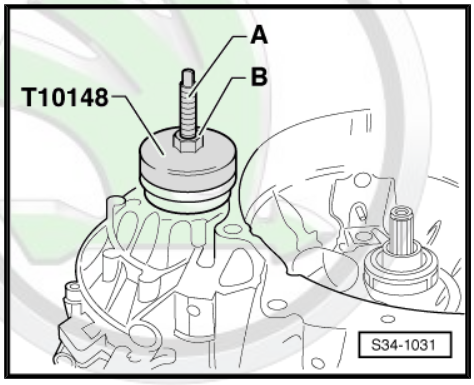

**Press in bushing and sealing ring**

– Clean point for sealing ring in gearbox.

A - Screw spindle of assembly device - MP3-434 (3066)- into the threaded part of the differential gear.

B - Nut M12

– By turning the nut -B- install the bushing over the pressure plate - T10148 - up to the stop.



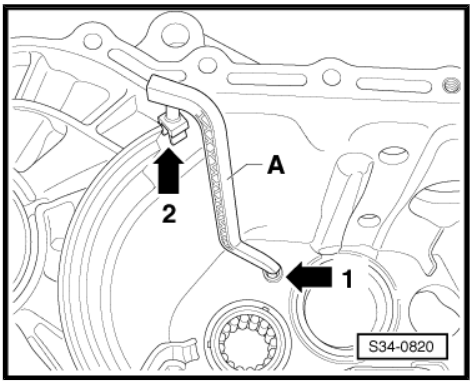

**Note**

*If the gearbox is disassembled press the bushing with pressure plate - T10148- up to the stop.*

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**Install oil drip pan -A- in the gearbox housing**

– At the same time insert the oil drip pan into the hole -arrow 1- and the groove -arrow 2-.

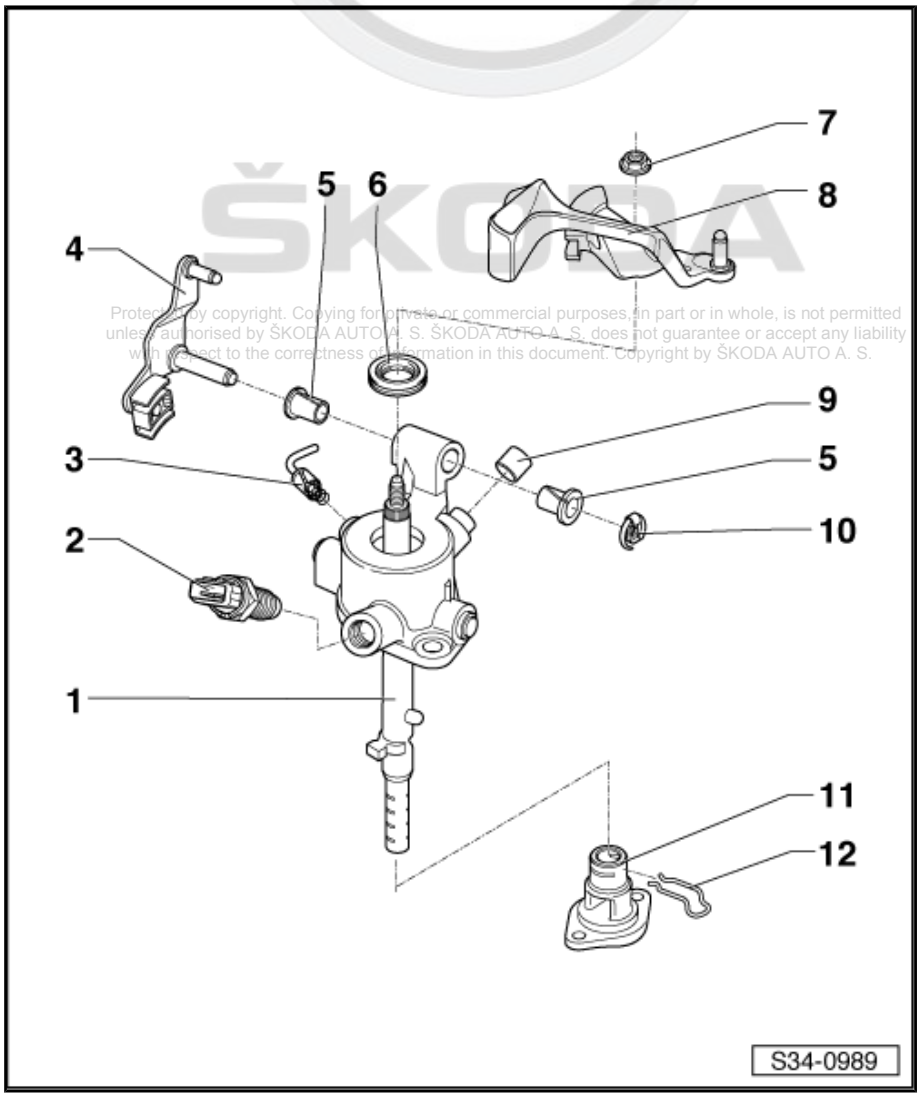



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# 6 Repairing the shift mechanism on the gearbox

**Special tools and workshop equipment required**

- Thrust piece - T10203-
- Pipe section - MP3-479 (VW 423)-
- Grease for splines - G 000 100-




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**1 - Gearshift shaft with cover**

- ❑ (Gearshift unit)
- ❑ Parts cannot be separated

**2 - Reversing light switch - F4-**

- ❑ Tighten to 20 Nm
- ❑ Grease tab with grease - G 000 100-

**3 - Fixing bolts**

- ❑ for adjusting the shift mechanism
- ❑ removing ⇒ page 189
- ❑ inserting ⇒ page 189

**4 - Relay lever**

- ❑ out of plastic or metal
- ❑ Fitting position ⇒ “1.14 Summary of components - Control cables up to 10.06”, page 101
- ❑ as of 06.07 the reversing level is plastic
- ❑ Removing and installing plastic relay lever together with cable lock ⇒ “1.16 Plastic relay lever”, page 106
- ❑ If the relay lever is made of plastic. neither the bushings pos. 5 nor the lock washer pos. 10 are required

**5 - Bushing**

- ❑ is not required. if the relay lever is made of plastic

**6 - Sealing ring**

- ❑ release with a screwdriver
- ❑ inserting ⇒ page 190

**7 - Nut**

- ❑ self-locking
- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 23 Nm

**8 - Gearshift lever**

- ❑ insert in such a way that the interrupted spacing of the teeth matches the gearshift shaft ⇒ “1.14 Summary of components - Control cables up to 10.06”, page 101

- ❑ may be replaced with the gearshift mechanism mounted
- ❑ Fitting position ⇒ “1.14 Summary of components - Control cables up to 10.06”, page 101
- ❑ as of 06.06 the diameter of the fixing bolts is smaller 06.06
  ⇒ “1.14 Summary of components - Control cables up to 10.06”, page 101

**9 - Cap**

- ❑ for gearbox bleeder

**10 - Circlip**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ is not required. if the relay lever is made of plastic

**11 - Cover**

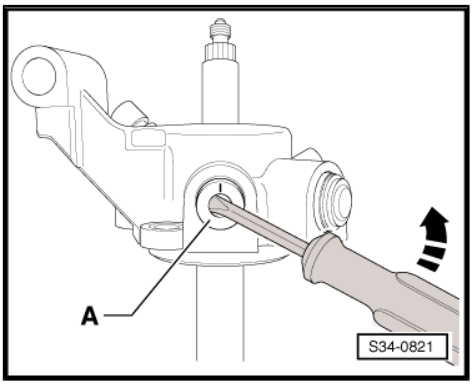
**12 - Spring**

- ❑ not installed on all gearboxes
- ❑ if present, reinstall

**Remove locking bolt -A- from gearshift cover**

– Remove the outer part of the locking bolt.

– Then lever out locking bolt carefully with a screwdriver.

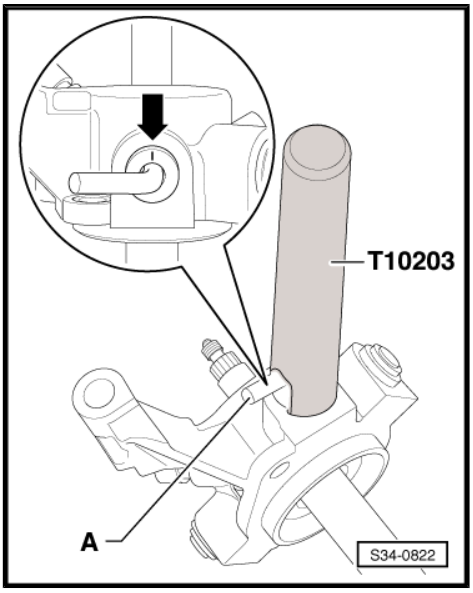



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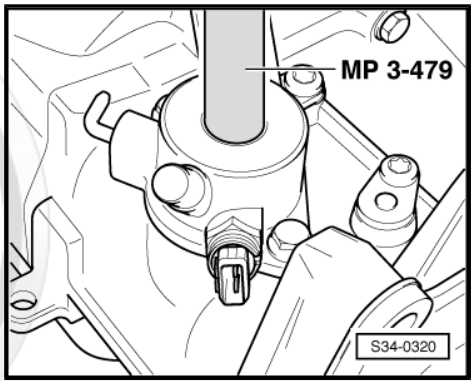
**Press locking bolt -A- into gearshift cover**

Fitting position:

The marking -arrow- points to the upper part of the gearshift shaft.



**Press in the gasket up to the stop.**




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# 7 Disassembling and assembling the gearshift forks

**Special tools and workshop equipment required**

- Pressure plate - MP3-407 (VW 402)-
- Thrust piece - T30100/1-
- Assembly tool - MP5-402 (3301)-
- Thrust piece - MP3-453 (VW 431) -
- Distance sleeve - MP3-458 (VW 472)-
- Driver - MP1-304 (10-206)-
- Removal tool for inner lining of the door panel - MP8-602/1-

**Note**

*The gearshift fork group with shift rails (Pos. 7) must not be disassembled for the disassembly and assembly of the shift segments, clamping plates and angular ball bearings.*

**1 - 5th gear shift segment**

- ❑ Identification ⇒ page 192
- ❑ It must still be possible to rotate the shift segment freely once the circlip has been fitted

**2 - Circlip**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ removing ⇒ page 192
- ❑ installing ⇒ page 192

**3 - 5th gear shift fork**

- ❑ Setting 5th gear ⇒ “4.7.3 Install 5th gear”, page 178

**4 - Screw**

- ❑ 25 Nm

**5 - 5th gear shift fork**

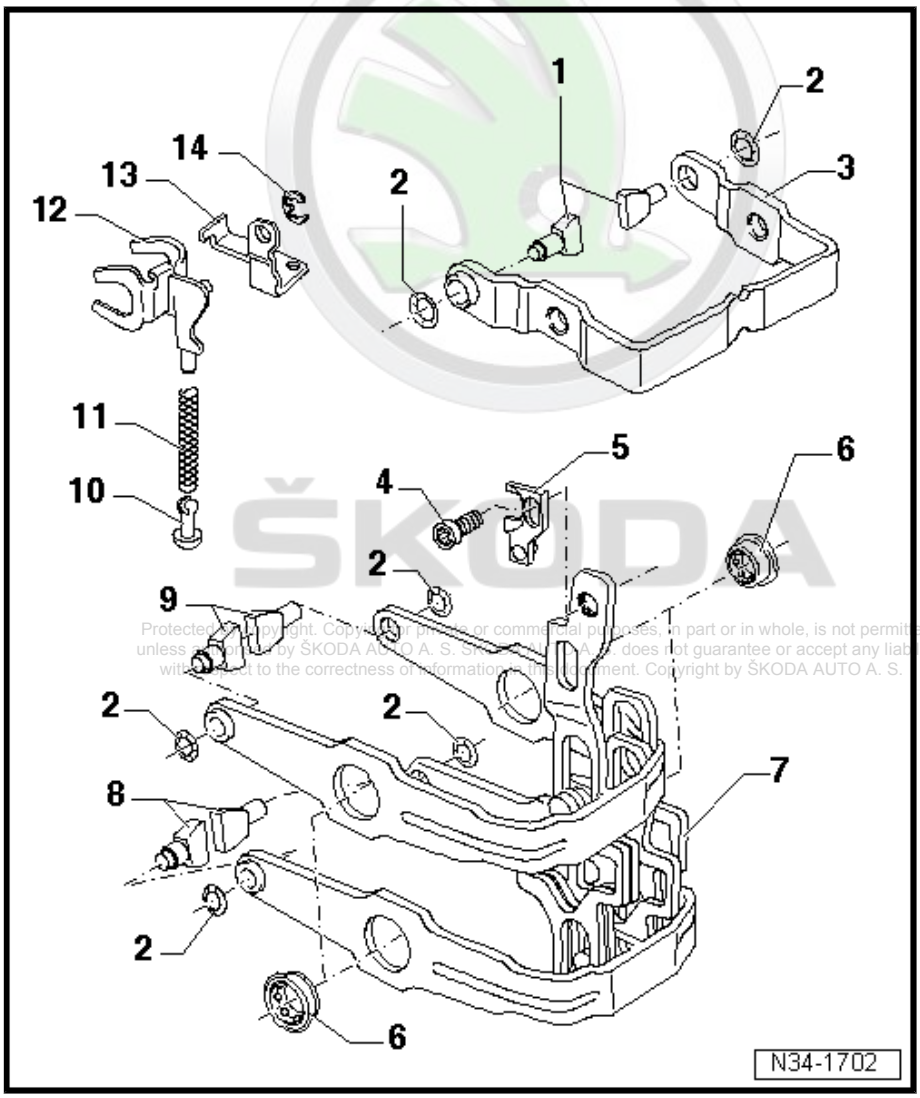
**6 - Ball bearing**

- ❑ 4 units
- ❑ removing ⇒ page 193
- ❑ inserting ⇒ page 193

**7 - Gearshift fork group with shift rails**

**8 - 1st/2nd gear shift segment**

- ❑ Identification ⇒ page 192
- ❑ It must still be possible to rotate the shift segment freely once the circlip has been fitted




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**9 - 3rd/4th gear shift segment**

- ❑ Identification ⇒ page 192
- ❑ It must still be possible to rotate the shift segment freely once the circlip has been fitted

**10 - Sliding shoe**

**11 - Spring**

**12 - Gearshift fork reverse gear**

**13 - Support for reverse gear shift fork**

**14 - Circlip**

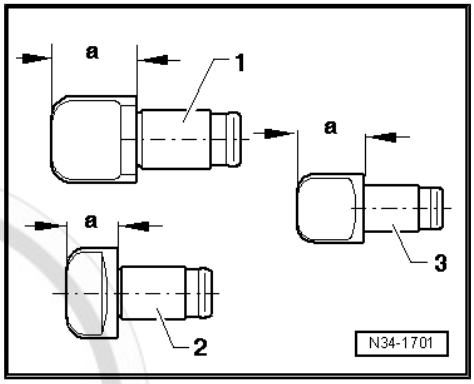
**Identification of shift segments**

**Dimension -a-**

1 - Shift segments 1st and 2nd gear = 11.4 mm

2 - Shift segments 3rd and 4th gear = 7.7 mm

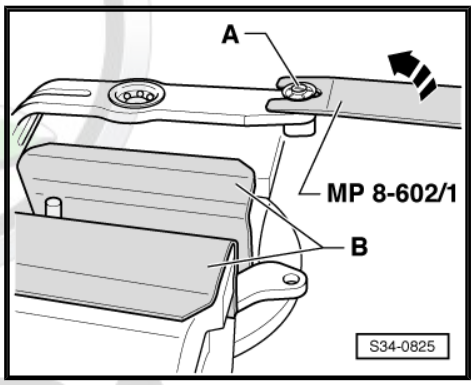
3 - Shift segments 5th gear = 12.1 mm




**Removing the circlip**

– Secure the shift fork in a vice fitted with protective jaws -B-.

– Lift off the circlip -A- in -direction of the arrow-.




**Fitting the circlip**

– Press the circlip with a handle wrench into the slot of the shift segment.

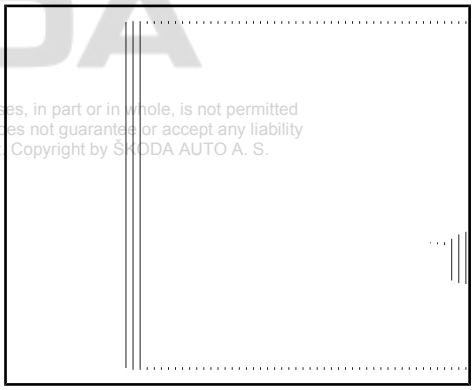
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**Note**

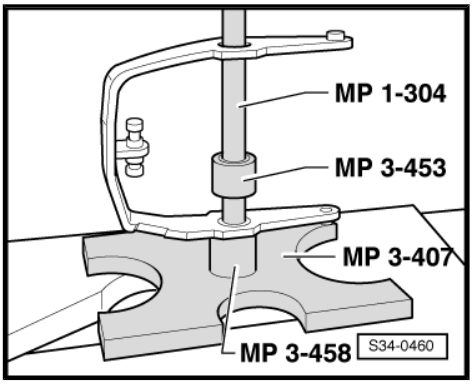
*It must still be possible to rotate the shift segment freely once the circlip has been fitted.*

A - Handle wrench, wrench size 10

B - Protective jaws



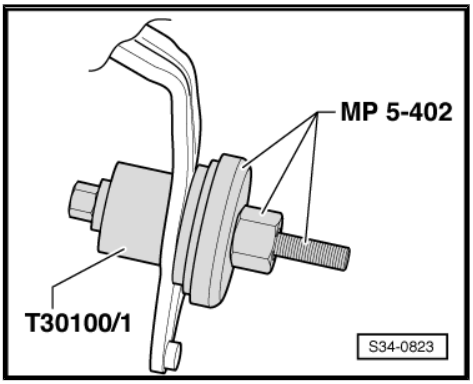
### Pressing off angular ball bearing




**Note**

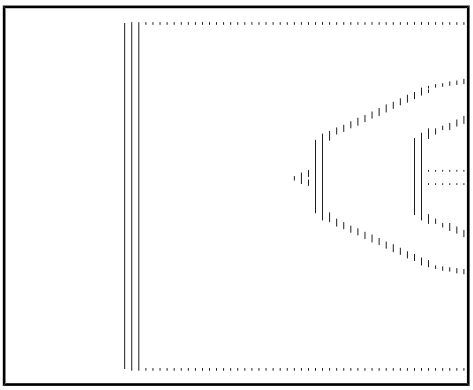
*Do not bend the shift forks when removing and installing the angular ball bearings.*

### Insert the angular ball bearing up to the stop into the gearshift fork




The recess in the thrust piece - T30100/1- points towards the ball bearing.

### Shift fork with fitted shift segments



| | Dimension -a- (mm) |
|---|---|
| 1st/2nd gear shift fork | 87.2 ... 87.4 |
| 3rd/4th gear shift fork | 93.6 ... 93.8 |

Assignment of the shift segments ⇒ page 192

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# 35 – Gears, shafts

## 1 Drive shaft

Disassembling and assembling the drive shaft
⇒ “1.1 Disassembling and assembling the drive shaft”, page 194

Setting drive shaft ⇒ “1.2 Setting drive shaft”, page 200

### 1.1 Disassembling and assembling the drive shaft

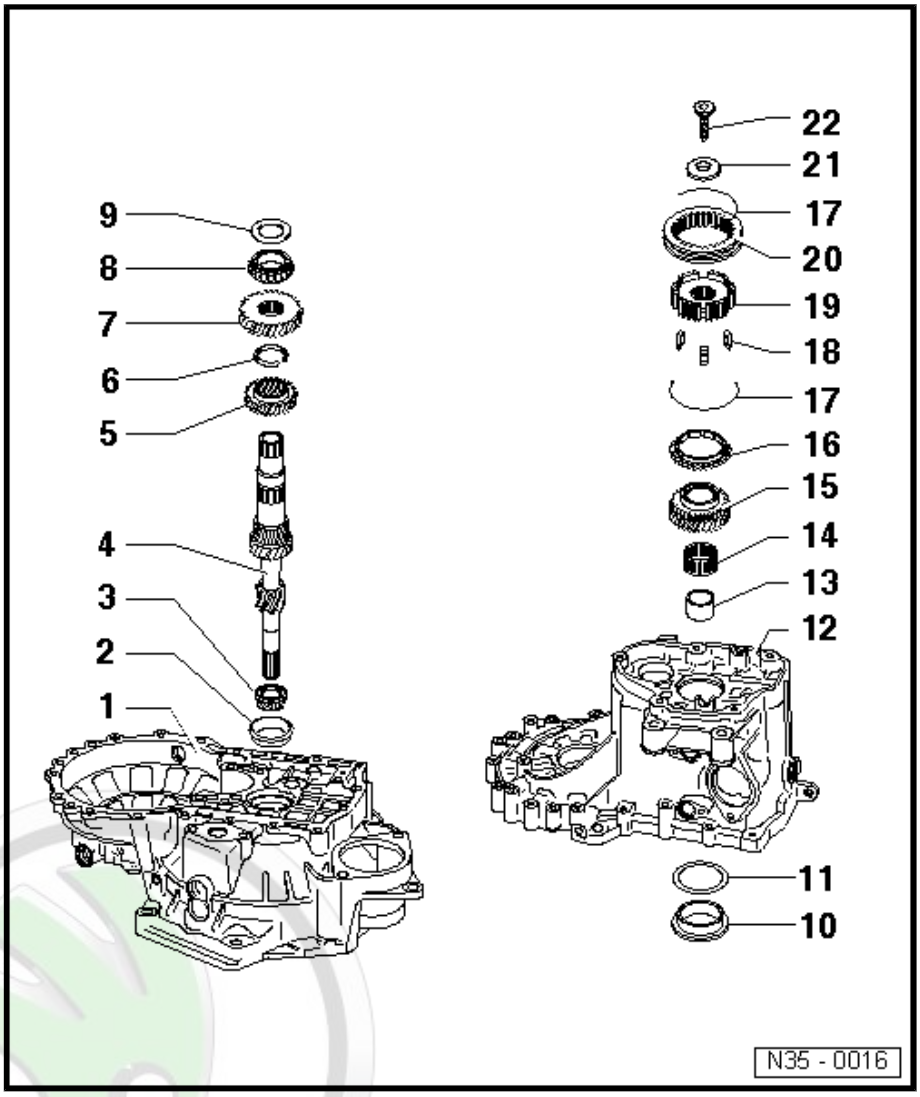
**Special tools and workshop equipment required**

- Pressure spindle - MP3-423 (VW 407)-
- Thrust washer - MP3-455 (VW 447 H)-
- Pressure spindle - MP3-408 (VW 412)-
- Pipe section - MP3-451 (VW 422)-
- Pressure plate - MP3-406 (VW 401)-
- Pressure plate - MP3-407 (VW 402)-
- Drift - MP3-448 (VW 408 A)-
- Pipe section - MP3-4013 (VW 421)-
- Thrust piece - MP3-411 (VW 454) -
- Thrust washer - MP3-413 (VW 510) -
- Thrust washer - MP3-456 (VW 447 I)-
- Pipe section - T30034(41-501)-
- Separating device - Kukko 17/1-

**Note**

- *Removing and installing drive shaft*
  *⇒ “4.7 Mounting sequence - completely disassembling and assembling the gearbox”, page 169 .*
- *When installing new pinions or a new drive shaft observe the technical data ⇒ “1 Safety instructions”, page 1 and instructions in the ⇒ Electronic Catalogue of Original Parts .*
- *If the position of the tapered-roller bearing is influenced when parts are replaced the drive shaft must be reset ⇒ “1.2 Setting drive shaft”, page 200 . Setting overview ⇒ “3 Setting overview”, page 237 .*

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**1 - Clutch housing**

**2 - Outer ring/tapered-roller bearing**

- ❑ pressing off ⇒ page 196
- ❑ inserting ⇒ page 196

**3 - Inner ring/tapered-roller bearing**

- ❑ pressing off ⇒ page 197
- ❑ inserting ⇒ page 197

**4 - Drive shaft**

- ❑ Adjust ⇒ “1.2 Setting drive shaft”, page 200

**5 - Gear wheel for 3rd gear**

- ❑ Fitting position: The collar points to the 3rd gear.
- ❑ pressing off ⇒ page 197
- ❑ inserting ⇒ page 198

**6 - Circlip**

- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**7 - Gear wheel for 4th gear**

- ❑ pressing off with outer ring/tapered-roller bearing and bushing ⇒ page 197
- ❑ inserting ⇒ page 198
- ❑ Collar points to the 3rd gear

**8 - Inner ring/tapered-roller bearing**

- ❑ press off with 4th gear pinion and bushing ⇒ page 197
- ❑ inserting ⇒ page 198

**9 - Thrust washer**

**10 - Outer ring/tapered-roller bearing**

- ❑ pressing off ⇒ page 199
- ❑ inserting ⇒ page 199

**11 - Adjusting washer**

- ❑ Determine thickness ⇒ “1.2 Setting drive shaft”, page 200

**12 - Gearbox housing**

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**13 - Bushing**

- ❑ for 5th gear needle bearing
- ❑ press out with 4th gear pinion and inner ring/tapered-roller bearing ⇒ page 197
- ❑ inserting ⇒ page 198
- ❑ insert thrust washer Pos. 9 before assembly

**14 - Needle bearing**

- ❑ for 5th gear

**15 - 5th gear sliding gear**

- ❑ remove together with 5th gear synchronizer body

**16 - 5th gear synchronizer ring**

- ❑ with integrated arresters
  ⇒ “4.3 Removing and installing gearbox housing cover and 5th gear”, page 160
- ❑ check for wear ⇒ “4.7.2 Assembling gearbox”, page 175

**17 - Spring**

- ❑ Fitting position ⇒ page 200 and ⇒ page 200

**18 - Arresters**

- ❑ (3 pieces)
- ❑ Fitting position ⇒ page 199

**19 - 5th gear synchroniser body**

- ❑ remove separately
  ⇒ “4.6 Mounting sequence - Removing and installing gearbox housing cover and 5th gear”, page 164
- ❑ remove together with the gearbox housing
  ⇒ “4.7 Mounting sequence - completely disassembling and assembling the gearbox”, page 169
- ❑ installing ⇒ “4.7.3 Install 5th gear”, page 178

**20 - 5th gear sliding sleeve**

- ❑ pull off together with the synchro-hub for 5th gear pos. 19

**21 - Disc spring**

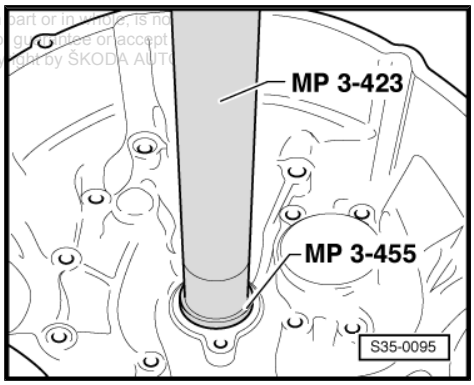
- ❑ Fitting position ⇒ “4.3 Removing and installing gearbox housing cover and 5th gear”, page 160

**22 - Multi-point socket head bolt**

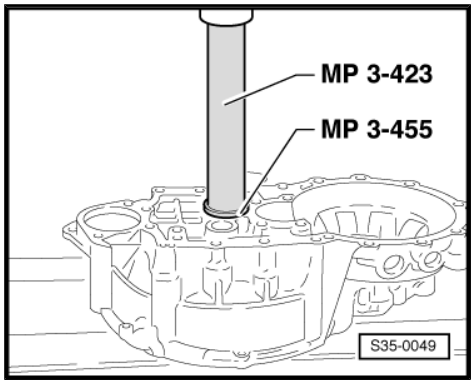
- ❑ Removing and installing
  ⇒ “4.3 Removing and installing gearbox housing cover and 5th gear”, page 160
- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ holds the plate spring in position
  ⇒ “4.3 Removing and installing gearbox housing cover and 5th gear”, page 160

**Pressing out outer ring/tapered-roller bearing**

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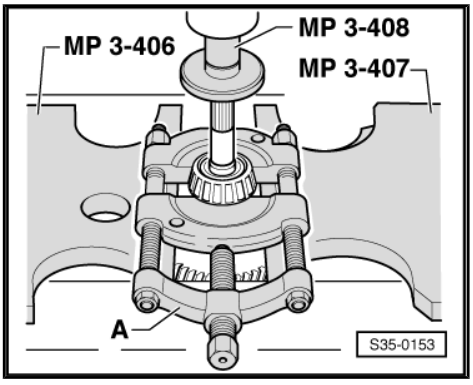



**Pressing on outer ring/tapered-roller bearing**

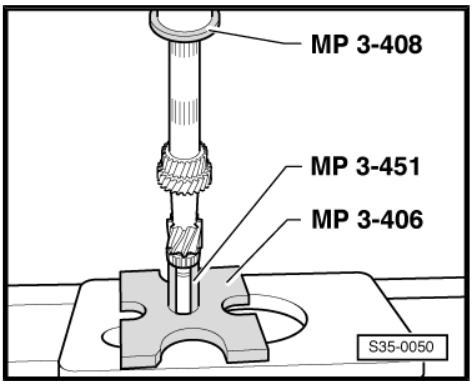


**Pressing off inner ring/tapered-roller bearing**

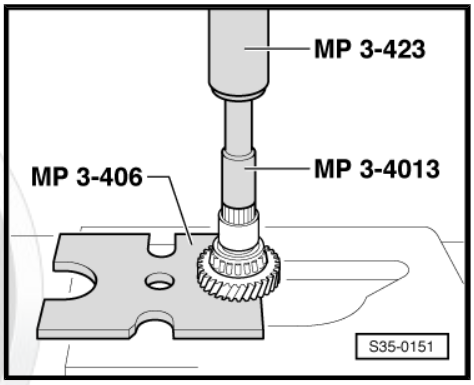
A - Separating device - Kukko 17/1-



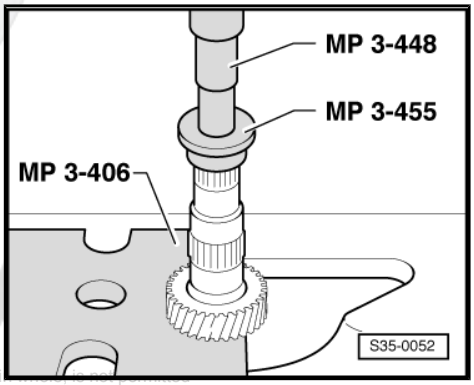

**Press on inner ring/tapered-roller bearing**




**Pressing off 4th gearwheel with tapered-roller bearing and bushing**

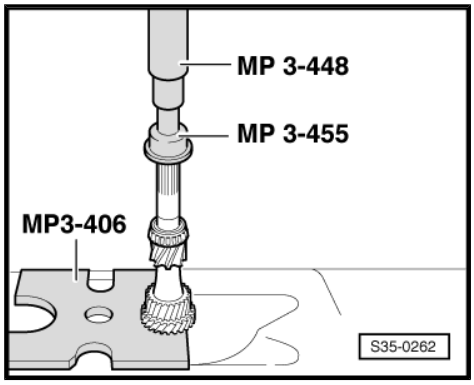



**Pressing off 3rd gear pinion**



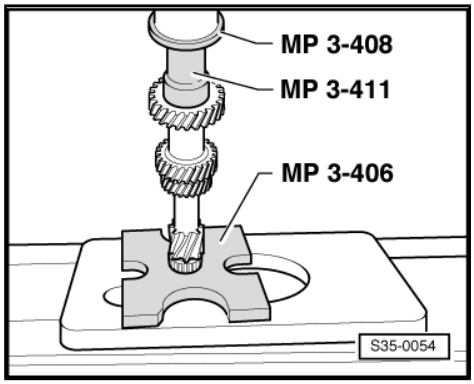

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**Pressing on 3rd gear pinion**

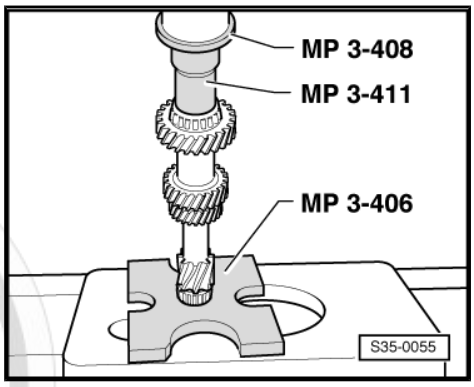



**Pressing on 4th gear pinion**

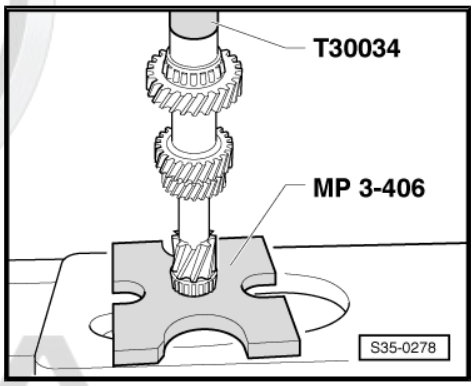
Collar points to the 3rd gear.




**Press on inner ring/tapered-roller bearing**

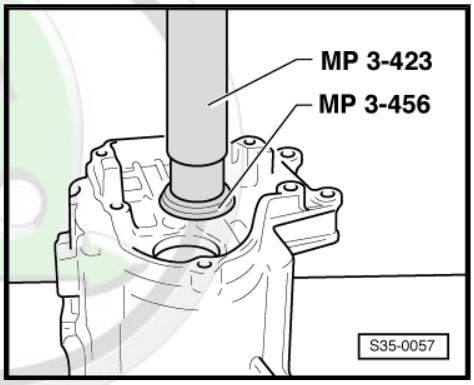



**Pressing on bushing for needle bearing**



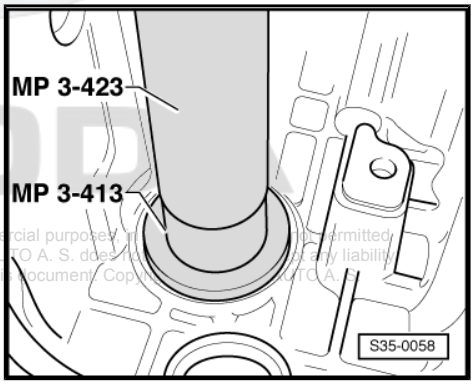

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### Pressing out outer ring/tapered-roller bearing




### Pressing on outer ring/tapered-roller bearing

– After setting the drive shaft insert with adjusting washer.




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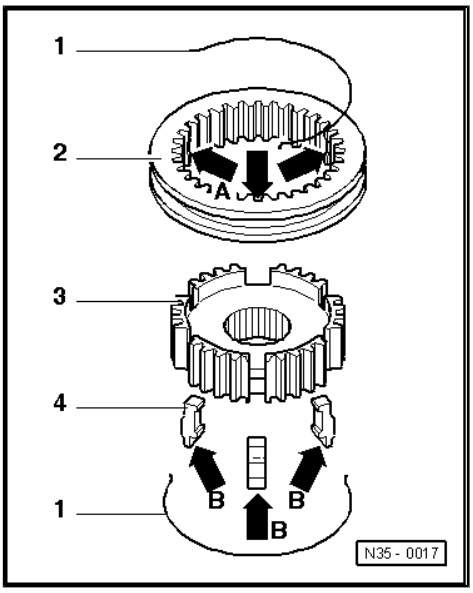
### 5th gear synchronization

1 - Springs for arresters

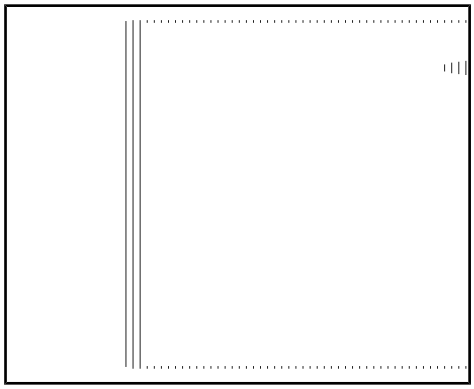
2 - Sliding sleeve with 3 recesses -arrows A- for the arresters -4-

3 - Synchronizer body

4 - Arresters (fitting position: leg -arrow B- points to the sharp teeth of the sliding sleeve -2-)



**Assemble sliding sleeve/5th gear synchronizer body**



– Slide the sliding sleeve over the synchronizer body.

The sharp teeth -A- and the collar -B- of the synchronizer body point in the same direction.

The recesses for the arresters in the sliding sleeve and the synchronizer body must be positioned above one another ⇒ page 199

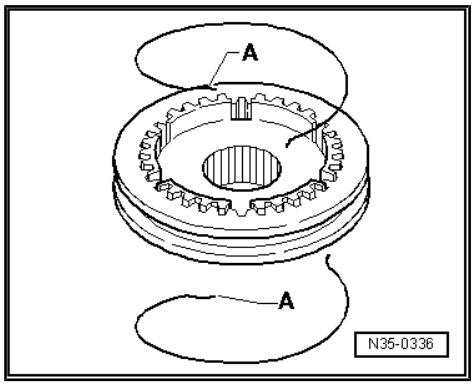
– Insert arresters (fitting position ⇒ page 199 ).

– Install the springs with 120° offset under the shoulder -C-. The angled ends of the spring must be located before the arresters -arrows-.

**Note**

*Observe the correct position of springs on the arresters which are hollow inside ⇒ page 200 .*

**Springs bent at right angles -A- for the 5th gear synchronisation**

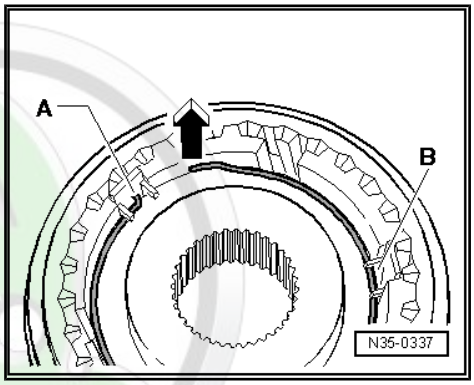



These springs are installed on both sides.

– The springs can only be installed on previous gearboxes together with arresters, which are hollow inside.

– Insert arresters (Fitting location ⇒ page 199 ).

Fitting location of the springs:




– Install the springs with 120° offset.

– The angled end -A- of the spring must grip into the hollow arrester and at the same time be located below the shoulder -B- of the arresters.

The end bent at right angles always points away from the synchronizer body -direction of arrow-.

## 1.2 Setting drive shaft

(Determine thickness of the adjusting washer)

**Special tools and workshop equipment required**

- Gauge block plate - MP3-405/17-
- Thrust washer - MP3-413 (VW 510) -
- Pressure spindle - MP3-423 (VW 407)-
- Universal dial gauge bracket - MP3-447 (VW 387)-
- Thrust washer - MP3-455 (VW 447 H)-
- Thrust washer - MP3-456 (VW 447 I)-
- Gearbox mount - T30109 (VW 353)-

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- Dial gauge

The drive shaft must be re-set when the following components are replaced:

- Gearbox housing
- Clutch housing
- Drive shaft
- Gear wheel for 4th gear

or

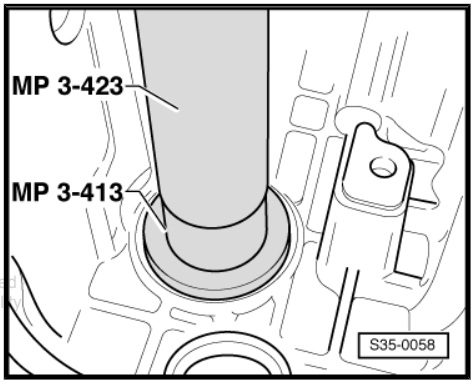
- Tapered-roller bearing

Setting overview ⇒ “3 Setting overview”, page 237

**Note**

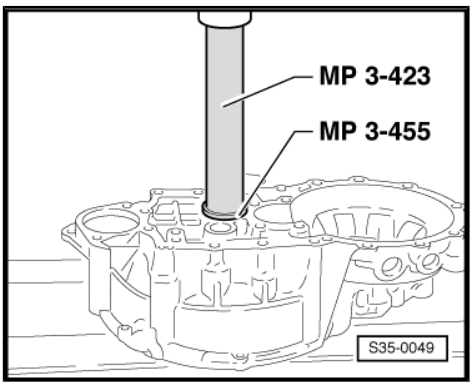
*Sealing surfaces of clutch and gearbox housing must be removed of sealant residues.*

– Press the outer ring/tapered-roller without adjusting washer up to the stop into the gearbox housing.




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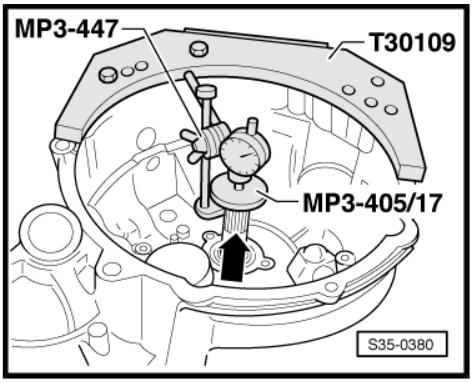
– Press the outer ring/tapered-roller bearing up to the stop into the clutch housing.




– Insert drive shaft in the clutch housing and install gearbox housing. Tighten screws to tightening torque ⇒ “4.4 Removing and installing gearbox housing and shift mechanism”, page 162 .

– Fit measuring device and dial gauge in the clutch housing.

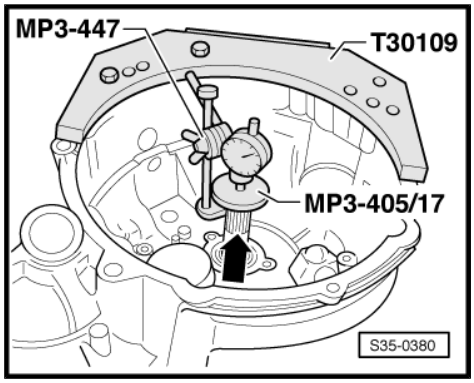
– Turn the drive shaft several times before measuring to ensure the tapered-roller bearings set. Set the dial gauge to “0” with 1 mm bias.




**Note**

*This procedure must be repeated before each subsequent measurement, because otherwise the dial gauge does not return to its initial setting to “0”.*

– Press drive shaft towards the dial gauge -direction of arrow-.
– Read off play on dial gauge and note (in the example = 1.21 mm).




**Note**

*The dial gauge does not return to its initial position.*

## 1.2.1 Determine thickness of the adjusting washer

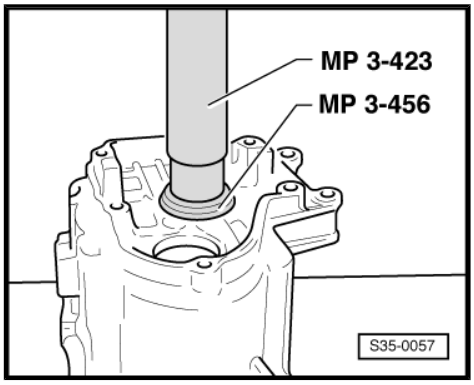
**Example:**

| Measured value of bearing play | Thickness of the adjusting washer according to the table |
|---|---|
| 1.21 mm | 1.175 mm |

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– Remove drive shaft and press out outer ring/tapered-roller bearing from the gearbox housing with thrust washer - MP3-456 (VW 447 I)- .

– Determine the adjusting washer thickness from the table ⇒ page 203 (example 1.175 mm).




**Adjusting washer table**

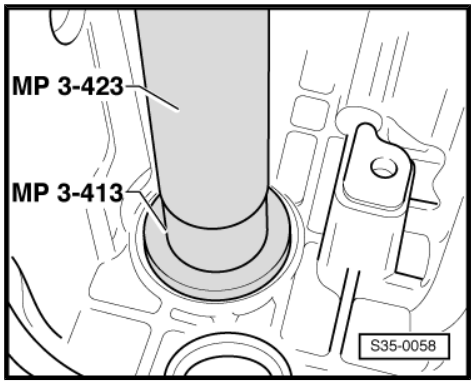
| Bearing clearance | Adjusting washer |
|---|---|
| **Measured value (mm)** | **Thickness (mm)** |
| 0.671…0.699 | 0.650 |
| 0.700…0.724 | 0.675 |
| 0.725…0.749 | 0.700 |
| 0.750…0.774 | 0.725 |
| 0.775…0.799 | 0.750 |
| 0.800…0.824 | 0.775 |
| 0.825…0.849 | 0.800 |
| 0.850…0.874 | 0.825 |
| 0.875…0.899 | 0.850 |
| 0.900…0.924 | 0.875 |
| 0.925…0.949 | 0.900 |
| 0.950…0.974 | 0.925 |
| 0.975…0.999 | 0.950 |
| 1.000…1.024 | 0.975 |
| 1.025…1.049 | 1.000 |
| 1.050…1.074 | 1.025 |
| 1.075…1.099 | 1.050 |
| 1.100…1.124 | 1.075 |
| 1.125…1.149 | 1.100 |
| 1.150…1.174 | 1.125 |
| 1.175…1.199 | 1.150 |
| 1.200…1.224 | 1.175 |
| 1.225…1.249 | 1.200 |
| 1.250…1.274 | 1.225 |
| 1.275…1.229 | 1.250 |
| 1.300…1.324 | 1.275 |
| 1.325…1.349 | 1.300 |
| 1.350…1.374 | 1.325 |
| 1.375…1.399 | 1.350 |
| 1.400…1.424 | 1.375 |
| 1.425…1.449 | 1.400 |
| 1.450…1.474 | 1.425 |
| 1.475…1.499 | 1.450 |
| 1.500…1.524 | 1.475 |
| 1.525…1.549 | 1.500 |
| 1.550…1.574 | 1.525 |
| 1.575…1.599 | 1.550 |
| 1.600…1.624 | 1.575 |
| 1.625…1.649 | 1.600 |
| 1.650…1.674 | 1.625 |
| 1.675…1.699 | 1.650 |
| 1.700…1.724 | 1.675 |

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**Note**

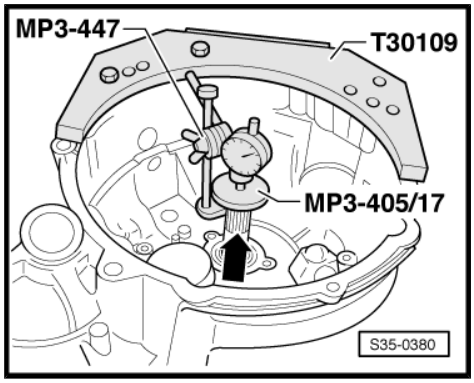
*Assign the adjusting washers via the ⇒ Electronic Catalogue of Original Parts .*

– Press outer ring/tapered-roller bearing with thrust washer - MP3-413 (VW 510)- into the gearbox housing together with the adjusting washer (in the example 1.175 mm).
– Position the gearbox housing and tighten screws to the given tightening torque
⇒ “4.4 Removing and installing gearbox housing and shift mechanism”, page 162 .




## 1.2.2 Control measurement

– Insert measuring device and dial gauge.
– Turn the drive shaft several times to ensure the tapered-roller bearings set.
– Press drive shaft in the -direction of the arrow-.
– The bearing clearance must be min. 0.01...max. 0.09 mm.




**Note**

*If no bearing clearance can be measured, however the drive shaft has a tangible valve rock and can easily be turned, then the setting is also OK.*

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# 2 Output shaft

Disassembling and assembling the output shaft
⇒ “2.1 Disassembling and assembling the output shaft”, page 205

Setting output shaft ⇒ “2.2 Setting output shaft”, page 215

## 2.1 Disassembling and assembling the output shaft

**Special tools and workshop equipment required**

- Drive bushing - MP1-316 (30-100)-
- Pressure plate - MP3-407 (VW 402)-
- Pressure spindle - MP3-408 (VW 412)-
- Thrust piece - MP3-411 (VW 454) -
- Pressure spindle - MP3-423 (VW 407)-
- Drift - MP3-448 (VW 408 A)-
- Drift - MP3-449 (VW 409)-
- Thrust washer - MP3-455 (VW 447 H)-
- Alignment rails - MP3-457 (VW 457) -
- Thrust washer - MP3-460 (VW 512)-
- Pipe section - MP3-461 (VW 519)-
- Insertion tool - MP3-466 (32-111)-
- Insertion tube - MP3-485 (32-109) -
- Pipe section - T30034 (41-501)-
- Pipe section - T30041 (2040)-
- Supporting bridge - V.A.G 1582-
- Support - V.A.G 1582/4-
- Support - V.A.G 1582/5-
- Interior extractor 37 up to 46 mm . e.g. -Kukko21/6-
- Countersupport e.g. -Kukko 22/2-
- Separating device 12..115 mm , e.g. -Kukko17/2-
- Feeler gauge

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**Note**

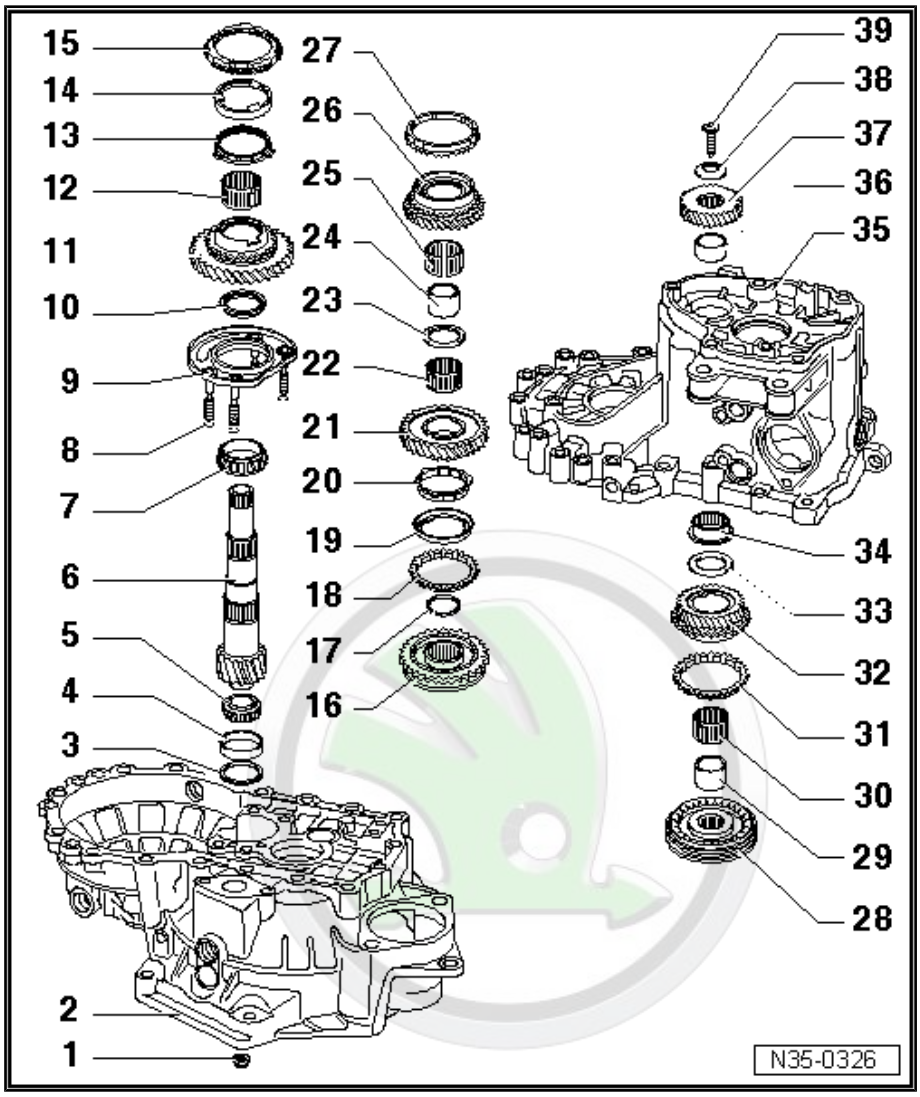
- *Removing and installing output shaft*
  *⇒ “4.7 Mounting sequence - completely disassembling and assembling the gearbox”, page 169 .*
- *When installing new pinions or a new output shaft observe the technical data*
  *⇒ “1 Safety instructions”, page 1 and instructions in the ⇒ Electronic Catalogue of Original Parts .*
- *Replace both tapered-roller bearings together.*

**The output shaft can be disassembled as follows:**

– Insert separating device under 2nd gear sliding gear
⇒ Item 21 (page 207) and press off as shown in
⇒ page 209 .

– Remove circlip ⇒ Item 17 (page 207) .

– Press off sliding sleeve with 1st and 2nd gear synchronizer body as shown in ⇒ page 210 .




**1 - Nut**

- ❑ 4 nuts for bearing support Pos. 9
- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ 25 Nm + 90°

**2 - Clutch housing**

**3 - Adjusting washer**

- ❑ for output shaft
- ❑ Determine thickness ⇒ “2.2 Setting output shaft”, page 215

**4 - Outer ring/tapered-roller bearing small**

- ❑ removing ⇒ page 208
- ❑ inserting ⇒ page 209

**5 - Inner ring/tapered-roller bearing small**

- ❑ remove ⇒ page 209
- ❑ inserting ⇒ page 209

**6 - Output shaft**

- ❑ Adjust ⇒ “2.2 Setting output shaft”, page 215

**7 - Inner ring/tapered-roller bearing large**

- ❑ remove ⇒ page 210
- ❑ inserting ⇒ page 210

**8 - O-ring**

- ❑ Position O-rings (4 pieces) on the bearing support screws
- ❑ always replace ⇒ Electronic Catalogue of Original Parts

**9 - Bearing support**

- ❑ with outer ring/tapered-roller bearing large and with screws
- ❑ Always replace outer ring together with tapered-roller bearing large and bearing support

**10 - Thrust washer**

- ❑ Heel of thrust washer points to tapered-roller bearing

**11 - 1st gear sliding gear**

**12 - Needle bearing**

- ❑ for 1st gear

**13 - Synchronizer ring**

- ❑ (Inner ring for 1st gear)
- ❑ Fitting position ⇒ page 210
- ❑ check for wear ⇒ page 211
- ❑ Check pegs for traces of wear

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**14 - Outer ring for 1st gear**

- ❑ Fitting position ⇒ page 210
- ❑ check for wear ⇒ page 211
- ❑ replace if there are any traces of scoring or friction

**15 - 1st gear synchronizer ring**

- ❑ Fitting position ⇒ page 210
- ❑ check for wear ⇒ page 211

**16 - Sliding sleeve with 1st and 2nd gear synchronizer body**

- ❑ after removing the circlip (Pos. 17) press off with bearing support ⇒ page 210
- ❑ disassembling ⇒ page 211
- ❑ Assembling sliding sleeve/synchronizer body ⇒ page 211 , ⇒ page 212 and ⇒ page 212
- ❑ Fitting position ⇒ page 212
- ❑ inserting ⇒ page 212

**17 - Circlip**

**18 - 2nd gear synchronizer ring**

- ❑ check for wear ⇒ page 211
- ❑ insert in such a way that the recesses lock into the arresters of the sliding sleeve Pos. 16

**19 - Outer ring for 2nd gear**

- ❑ insert into synchronizer ring Pos. 18
- ❑ Fitting position ⇒ page 213
- ❑ replace if there are any traces of scoring or of friction ⇒ Electronic Catalogue of Original Parts

**20 - Synchronizer ring**

- ❑ (Inner ring for 2nd gear)
- ❑ check for wear ⇒ page 211
- ❑ Check pegs for traces of wear
- ❑ Fitting position ⇒ page 213

**21 - 2nd gear sliding gear**

- ❑ Fitting position ⇒ page 213

**22 - Needle bearing**

- ❑ for 2nd gear

**23 - Thrust washer**

**24 - Bushing for 3rd gear needle bearing**

- ❑ press off with 2nd gear sliding gear ⇒ page 209
- ❑ inserting ⇒ page 213

**25 - Needle bearing**

- ❑ for 3rd gear

**26 - 3rd gear sliding gear**

**27 - 3rd gear synchronizer ring**

- ❑ check for wear ⇒ page 214

**28 - Sliding sleeve with 3rd and 4th gear synchronizer body**

- ❑ press off together with 2nd gear Pos. 21 and 3rd gear Pos. 26 sliding gear ⇒ page 209
- ❑ disassembling ⇒ page 214
- ❑ Assembling sliding sleeve/synchronizer body ⇒ page 214 , ⇒ page 214 and ⇒ page 214
- ❑ Fitting position sliding sleeve with synchronizer body ⇒ page 215
- ❑ inserting ⇒ page 215

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**29 - Bushing**

- ❑ for 4th gear needle bearing
- ❑ press off with sliding sleeve and 3rd and 4th gear synchronizer body (Pos. 28) ⇒ page 209
- ❑ inserting ⇒ page 215

**30 - Needle bearing**

- ❑ for 4th gear

**31 - 4th gear synchronizer ring**

- ❑ check for wear ⇒ page 214

**32 - 4th gear sliding gear**

**33 - Thrust washer**

**34 - Needle bearing**

- ❑ for output shaft
- ❑ Removing and installing ⇒ “5 Repairing gearbox housing and clutch housing”, page 182

**35 - Gearbox housing**

**36 - Bushing**

- ❑ for needle bearing of output shaft Pos. 34
- ❑ pressing off ⇒ page 209
- ❑ inserting ⇒ page 215

**37 - Gear wheel for 5th gear**

- ❑ remove separately
  ⇒ “4.6 Mounting sequence - Removing and installing gearbox housing cover and 5th gear”, page 164
- ❑ remove together with the gearbox housing
  ⇒ “4.7 Mounting sequence - completely disassembling and assembling the gearbox”, page 169
- ❑ installing ⇒ “4.7.3 Install 5th gear”, page 178

**38 - Disc spring**

- ❑ Fitting position
  ⇒ “4.7 Mounting sequence - completely disassembling and assembling the gearbox”, page 169

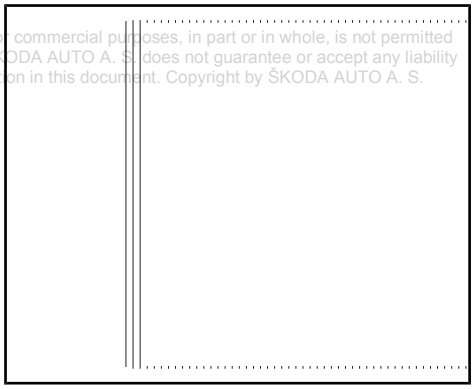
**39 - Multi-point socket head bolt**

- ❑ Removing and installing
  ⇒ “4.3 Removing and installing gearbox housing cover and 5th gear”, page 160
- ❑ always replace ⇒ Electronic Catalogue of Original Parts
- ❑ holds the plate spring in position
  ⇒ “4.3 Removing and installing gearbox housing cover and 5th gear”, page 160

**Removing outer ring/tapered-roller bearing small**

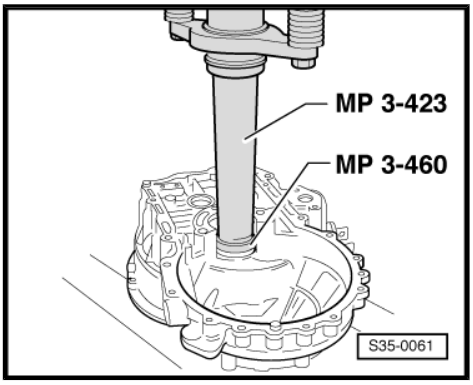
A - Interior extractor 37...46 mm , e.g. -Kukko 21/6-

B - Countersupport . e.g. -Kukko 22/2-



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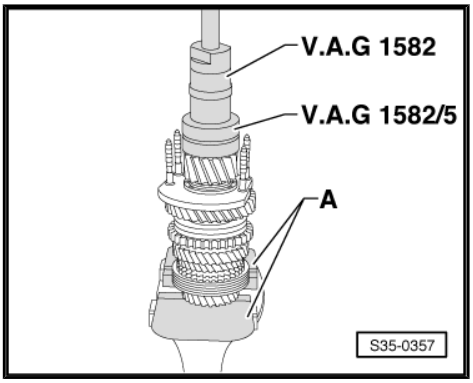
**Pressing in small outer ring/tapered-roller bearing**



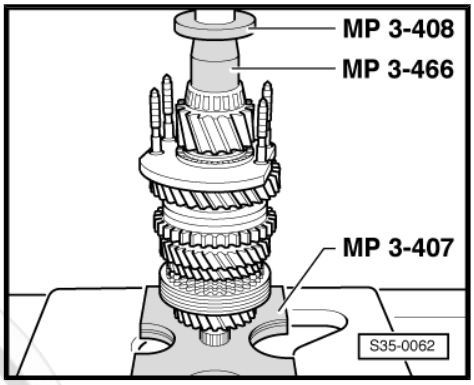

**Extracting small inner ring/tapered-roller bearing**

A - Vice with protective jaws

– Insert the gripper and tighten behind the rollers of the bearing, then turn bearing and tighten the gripper.




**Press on small inner ring/tapered-roller bearing**

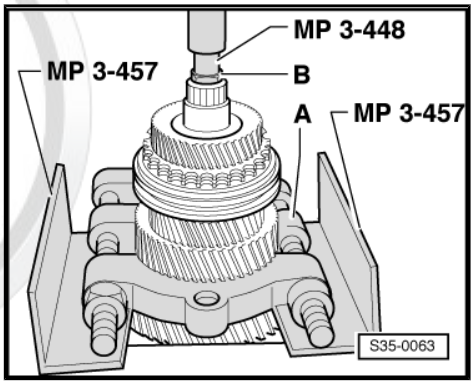



**Pressing out 3rd and 4th gear synchronizer body/sliding sleeve, 2nd, 3rd and 4th gear sliding gear with bushing for needle bearing output shaft**

A - Separating device 22..115 mm , e.g. -Kukko 17/2-

B - Screw M10 x 20

– Insert separating device under 2nd gear sliding gear and press off.



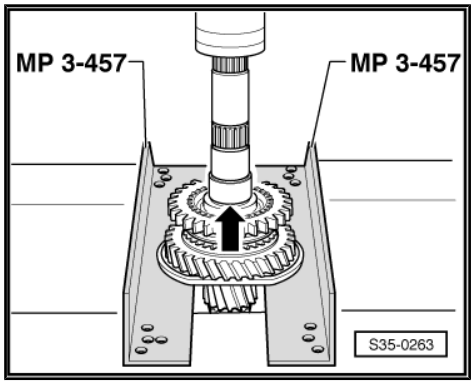

**Note**

*Support the separating device in such a way that the 1st and 2nd gear sliding sleeve is not drawn off.*

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**Press off sliding sleeve with synchronizer body and bearing support**

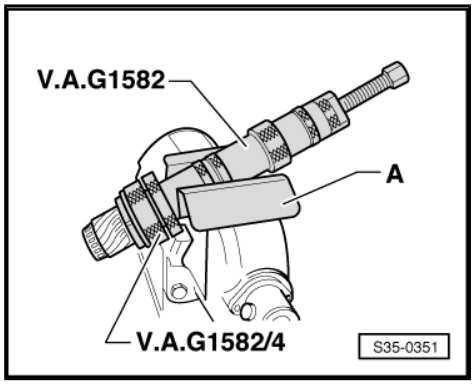
– First remove the circlip -arrow-.




**Pulling off large inner ring/tapered-roller bearing**

A - Protective jaws

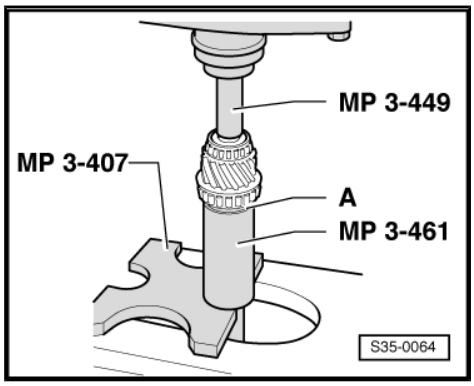
– Before fitting the extractor insert screw M10 x 20 in the output shaft bore.




**Pressing on large inner ring/tapered-roller bearing**

A - Thrust washer

– Insert thrust washer before pressing in the inner ring. The shoulder points to the inner ring.




**Fitting position of the inner ring, outer ring and 1st gear synchronizer ring**

– Position the inner ring -A- on the 1st gear sliding gear.

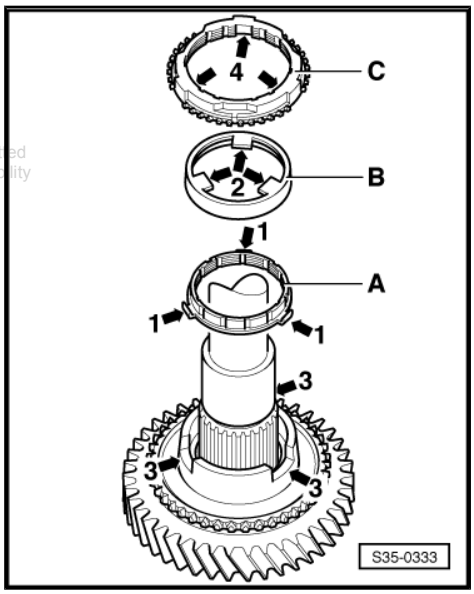
The angled lands -arrow 1- point towards the outer ring -B-.

– Position the outer ring -B-.

Lock the lands -arrows 2- in the recesses -arrows 3- of the sliding gear.

– Position the synchronizer ring -C-.

Lock the recesses -arrows 4- in the lands -arrows 1- of the inner ring -A-.




**Note**

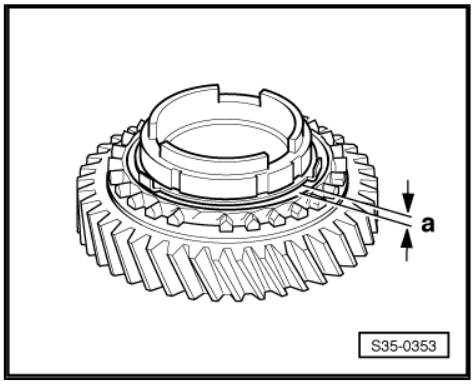
*If these components should not be replaced, make sure that they are assigned again to the original gear.*

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### Check 1st and 2nd gear inner ring for wear

– Press the inner ring on the cone of the sliding gear and measure clearance “a” with a feeler gauge.

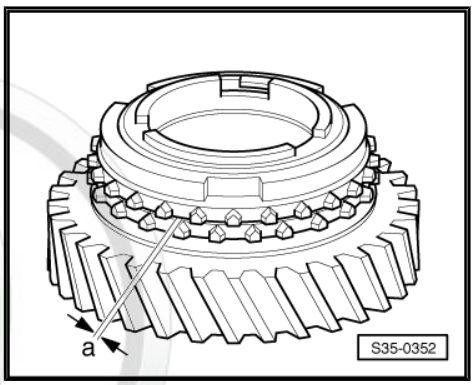
| Dimension “a” | Installation dimension | Wear limit |
|---|---|---|
| 1st and 2nd gear | 0.75 … 1.25 mm | 0.3 mm |




### Check 1st and 2nd gear synchronizer ring for wear

– Press the synchronizer ring. outer ring and inner ring on the cone of the sliding gear and measure clearance -a- with a feeler gauge.

| Dimension “a” | Installation dimension | Wear limit |
|---|---|---|
| 1st and 2nd gear | 1.2 … 1.8 mm | 0.5 mm |




### Disassembling and assembling the sliding sleeve/1st and 2nd gear synchronizer body

1 - Spring

Assign the springs via the ⇒ Electronic Catalogue of Original Parts .

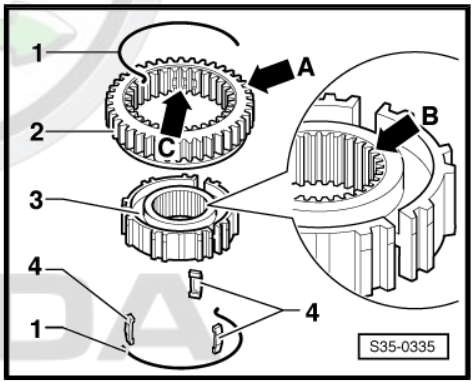
Installation together with arresters, which are hollow inside ⇒ page 212

Installation together with arresters, which are not hollow inside ⇒ page 212 .

2 - Sliding sleeve

3 - Synchronizer body

4 - Arresters




Assign the arresters via the ⇒ Electronic Catalogue of Original Parts .

The collar on both sides of the synchronizer body is identical in width.

**The collar has a chamfer on one side -arrow B-.**

The chamfer on the collar of the synchronizer body and the outer serration of the sliding sleeve -arrow A- point after assembly in the same direction.

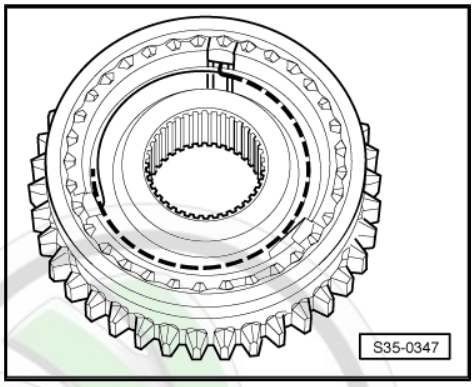
The recesses for the arresters on the synchronizer body and the sliding sleeve -arrow C- must be positioned above one another.

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**Assembly of sliding sleeve/1st and 2nd gear synchronizer body together with arresters, which are hollow inside**

- The sliding sleeve is drawn over the synchronizer body.

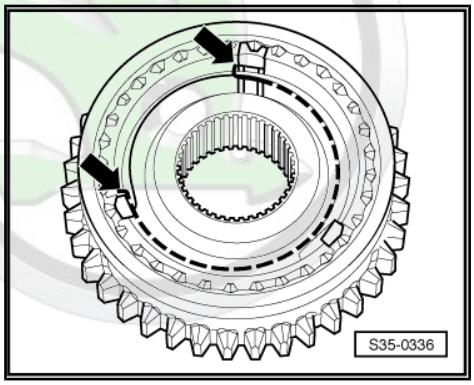
– Insert arresters and install springs with 120° offset. The angled end of the spring must grip into the hollow arrester.




**Assembly of sliding sleeve/1st and 2nd gear synchronizer body together with arresters, which are not hollow inside**

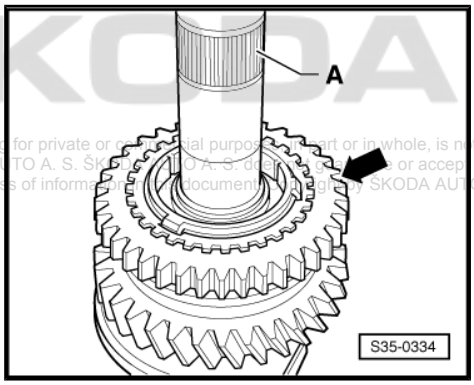
- The sliding sleeve is drawn over the synchronizer body.

– Insert arresters and install springs with 120° offset. The angled ends of the spring must be located before the arresters -arrows-.




**Fitting position of the 1st and 2nd gear sliding sleeve/synchronizer body**

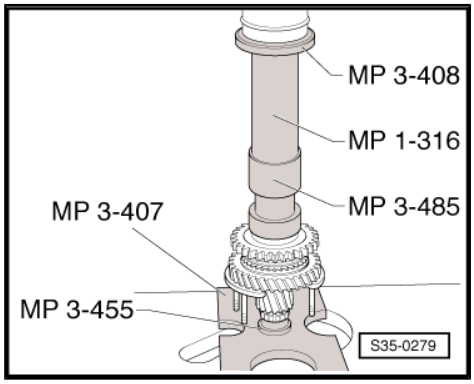
The teeth of the sliding sleeve -arrow- point towards the serration for the 3rd/4th gear synchronizer body -A-.




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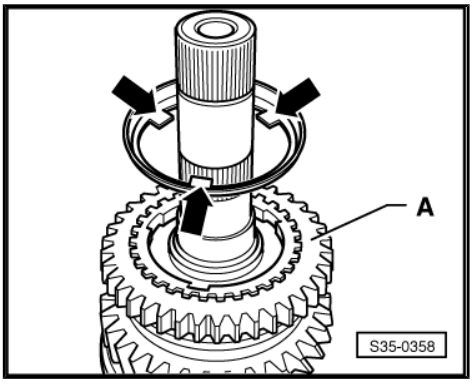
**Press on the sliding sleeve/1st and 2nd gear synchronizer body**

Rotate the synchronizer ring in such a way that the slots are flush with the arresters.



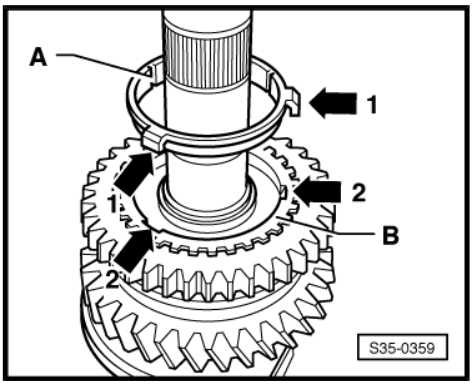
### Fitting position of the 2nd gear outer ring

The pegs -arrows- point towards the 1st gear -A-.



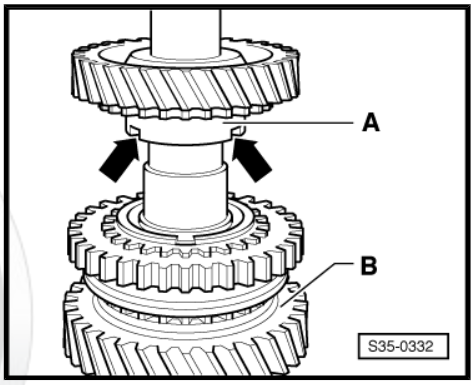

### Fitting position for synchronizer ring (inner ring for 2nd gear) -A-

The pegs -arrow 1- lock into the recesses -arrow 2- of the synchronizer ring -B-.

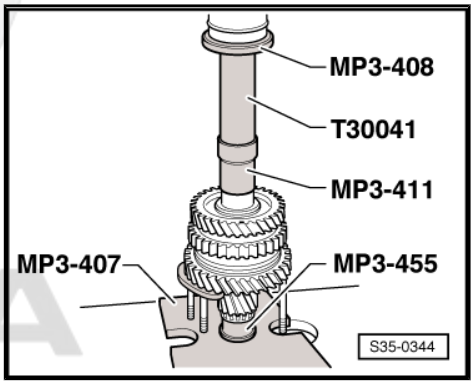



### Fitting position 2nd gear sliding gear

The higher collar -A- points towards the 1st gear -B-. The recesses in the collar -arrows- lock into the pegs of the outer ring ⇒ page 213 .




### Pressing on bushing for 3rd gear needle bearing

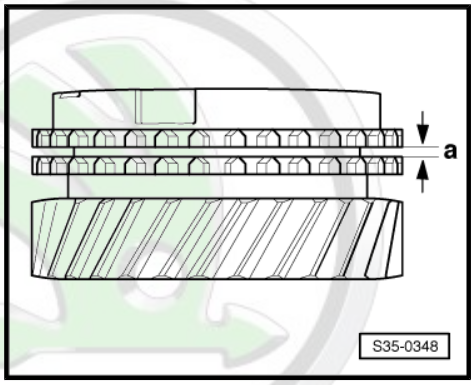



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### Check 3rd and 4th gear synchronizer ring for wear

– Press the synchronizer ring on the cone of the sliding gear and measure clearance -a- with a feeler gauge.

| Dimension “a” | Installation dimension | Wear limit |
|---|---|---|
| 3rd and 4th gear | 1.0 … 1.7 mm | 0.5 mm |




### Disassembling and assembling the sliding sleeve/3rd and 4th gear synchronizer body

1 - Spring

Assign the springs via the ⇒ Electronic Catalogue of Original Parts .

Installation together with arresters, which are hollow inside ⇒ page 214 .

Installation together with arresters, which are not hollow inside ⇒ page 214 .

2 - Arresters

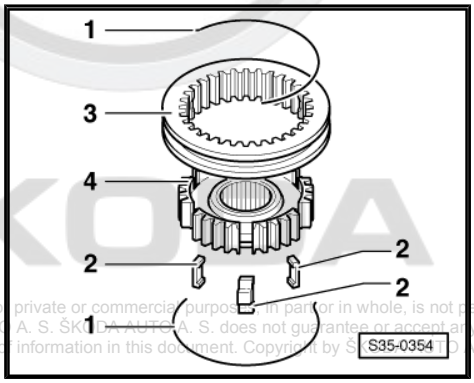
Assign the arresters via the ⇒ Electronic Catalogue of Original Parts .

3 - Sliding sleeve

4 - Synchronizer body

– Slide the sliding sleeve over the synchronizer body.

The recesses for the arresters on the synchronizer body and the sliding sleeve must be positioned above one another.

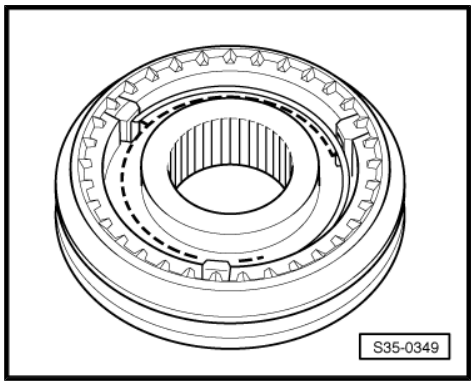



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### Assembly of sliding sleeve/3rd and 4th gear synchronizer body together with arresters, which are hollow inside

The sliding sleeve is drawn over the synchronizer body.

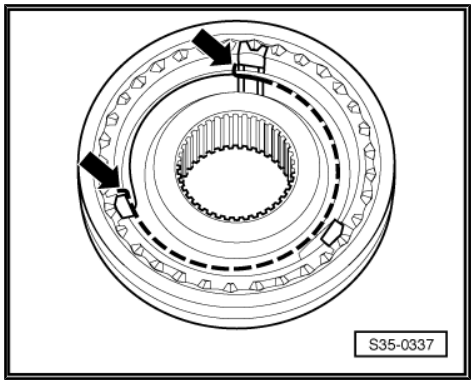
– Insert arresters and install springs with 120° offset. The angled end of the spring must grip into the hollow arrester.




### Assembly of sliding sleeve/3rd and 4th gear synchronizer body together with arresters, which are not hollow inside

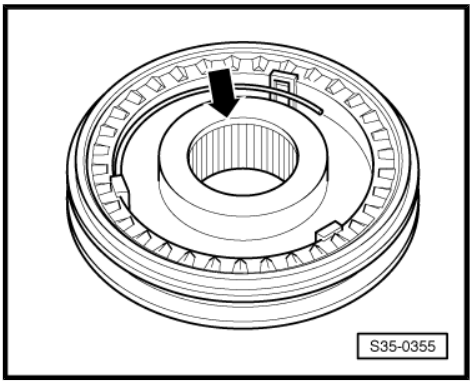
• The sliding sleeve is drawn over the synchronizer body.

– Insert arresters and install springs with 120° offset. The angled ends of the spring must be located before the arresters -arrows-.

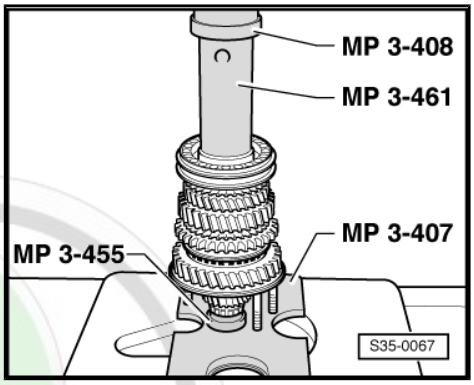


**Fitting position of the sliding sleeve/3rd and 4th gear synchronizer body**

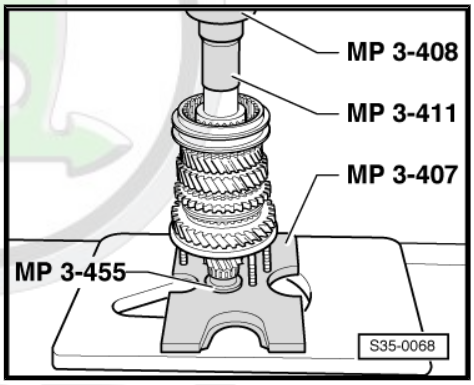
Chamfer -arrow- points towards the 4th gear.



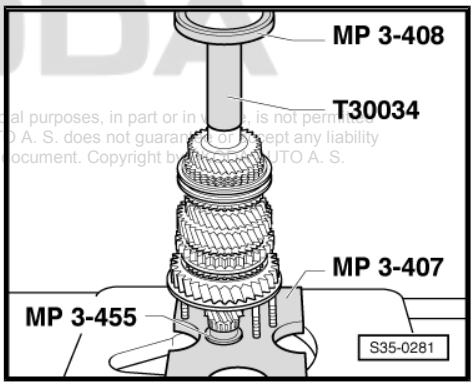

**Press on the synchronizer body with the 3rd and 4th gear sliding sleeve**




**Pressing on bushing for 4th gear needle bearing**




**Pressing on bushing for needle bearing/output shaft**




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## 2.2 Setting output shaft

(Determine adjusting washer for output shaft)

**Special tools and workshop equipment required**

- Gauge block plate - MP3-405/17-
- Pressure spindle - MP3-423 (VW 407)-
- Universal dial gauge bracket - MP3-447 (VW 387)-

- Thrust washer - MP3-460 (VW 512)-
- Bolts M8 and M10 - 3114/2-
- Interior extractor 37...46 mm , e.g. -Kukko 21/6-
- Countersupport e.g. -Kukko 22/2-
- Dial gauge

The output shaft must be re-set when the following components are replaced:

- Output shaft
- Clutch housing

or

- Tapered-roller bearing

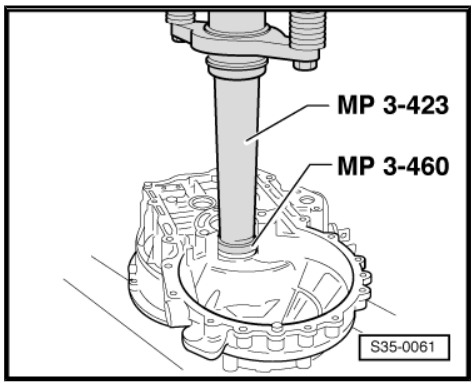
Setting overview ⇒ “3 Setting overview”, page 237 .

**Note**

*Sealing surfaces of clutch and gearbox housing must be removed of sealant residues.*

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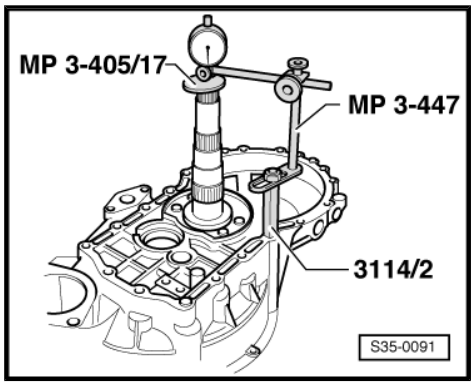
– Press in outer ring/tapered-roller bearing small in the clutch housing with a 0.65 mm thick adjsuting washer up to the stop
– Insert output shaft and tighten nuts for the bearing support to tightening torque ⇒ “2.1 Disassembling and assembling the output shaft”, page 205 .
– Turn output shaft 20 to 30 times in one direction.




**Note**

- *Therefore, it must be turned in one direction so that the rolling elements/tapered-roller bearings settle in one direction.*
- *This requires 20 to 30 turns.*
- *Otherwise, the result of the measurement will be incorrect.*

– Insert dial gauge (3 mm measuring range) and set to “0” with a 1 mm bias.
– Move the output shaft up and down, read off and write down the clearance on the dial gauge. (Example: 0.20 mm)




## 2.2.1 Determine thickness of the adjusting washer

The specified bearing preload is reached by adding the established measured value (0.20 mm in the example) to the inserted shim (0.65 mm) and by adding a constant preload value (0.10… 0.15 mm).

Example:

| | |
|---|---|
| inserted washer | 0.65 mm |
| + measured value | 0.20 mm |
| + pressure (const. value) | 0.15 mm |
| Thickness of the adjusting washer | 1.00 mm |

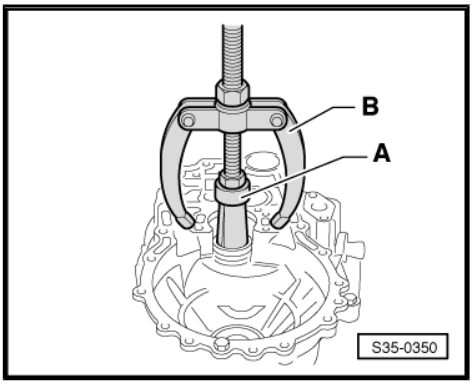
**Example:**

| Bearing clearance = (adjusting washer 0.65 mm and the determined measured value) | Thickness of the adjusting washer according to the table |
|---|---|
| 0.850 mm | 1.000 mm |

– Remove output shaft and pull out small outer ring/tapered-roller bearing.

-A- - interior extractor 37...46 mm , e.g. -Kukko 21/6-

-B- countersupport , e.g. -Kukko 22/2-




The following adjusting washers are available:

**Adjusting washer table**

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| Bearing clearance = (adjusting washer 0.65 mm and the determined measured value) | Adjusting washer thickness (mm) |
|---|---|
| 0.650 | 0.750 |
| 0.660…0.689 | 0.800 |
| 0.690…0.739 | 0.850 |
| 0.740…0.789 | 0.900 |
| 0.790…0.839 | 0.950 |
| 0.840…0.889 | 1.000 |
| 0.890…0.939 | 1.050 |
| 0.940…0.989 | 1.100 |
| 0.990…1.039 | 1.150 |
| 1.040…1.089 | 1.200 |
| 1.090…1.139 | 1.250 |
| 1.140…1.189 | 1.300 |
| 1.190…1.239 | 1.350 |
| 1.240…1.289 | 1.400 |
| 1.290…1.339 | 1.450 |
| 1.340…1.389 | 1.500 |
| 1.390…1,429 | 1.550 |

**Note**

*Assign the adjusting washers via the ⇒ Electronic Catalogue of Original Parts .*

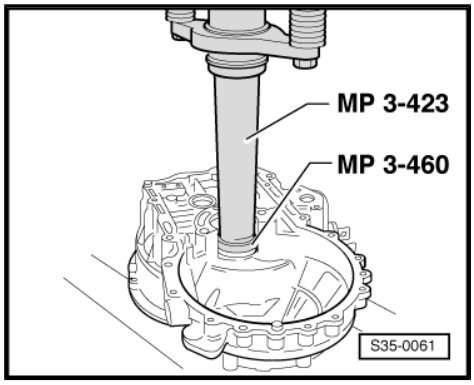
– Insert adjusting washers of the determined thickness, the thickest adjusting washer first.

• If the previous adjusting washer 0.65 mm should be inserted again, it must be checked for damage.

If the measured washer thickness is greater than the one listed in the table. 2 washers corresponding to the measured value may be fitted.

The various thicknesses make it possible to achieve the exact shim thickness required.

– Small outer ring/tapered-roller bearing with the determined adjusting washer (in the example 1.00 mm).
– Install output shaft and tighten nuts for the bearing support in the clutch housing to tightening torque
⇒ “2.1 Disassembling and assembling the output shaft”, page 205 .




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# 3 Reverse shaft

Disassembling and assembling the reverse shaft
⇒ “3.1 Disassembling and assembling the reverse shaft”, page 219

## 3.1 Disassembling and assembling the reverse shaft

**Special tools and workshop equipment required**

- Pressure plate - MP3-406 (VW 401)-
- Thrust piece - MP3-411 (VW 454) -
- Pressure spindle - MP3-423 (VW 407)-
- Pressure spindle - MP3-448 (VW 408 A)-
- Thrust washer - MP3-455 (VW 447 H)-
- Centering mandrel - MP3-463 (12-551)-
- Pressure spindle - MP6-405 (VW 411)-
- Interior extractor 14.5...18.5 mm , e.g. -Kukko 21/2-
- Countersupport e.g. -Kukko 22/1-

**Note**

*Always replace the needle bushing from the clutch housing or from the reverse shaft support after disassembling ⇒ Electronic Catalogue of Original Parts .*

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**1 - Clutch housing**

**2 - Needle bushing**

- ❑ removing ⇒ page 220
- ❑ inserting ⇒ page 221
- ❑ always replace after removing ⇒ Electronic Catalogue of Original Parts

**3 - Reverse pinion**

**4 - Circlip**

- ❑ always replace after removing ⇒ Electronic Catalogue of Original Parts
- ❑ carefully fit on new circlip
- ❑ do not over-extend

**5 - Reverse gear sliding gear**

- ❑ remove circlip pos. 4 before replacing
- ❑ Collar points to reverse pinion

**6 - Reverse shaft**

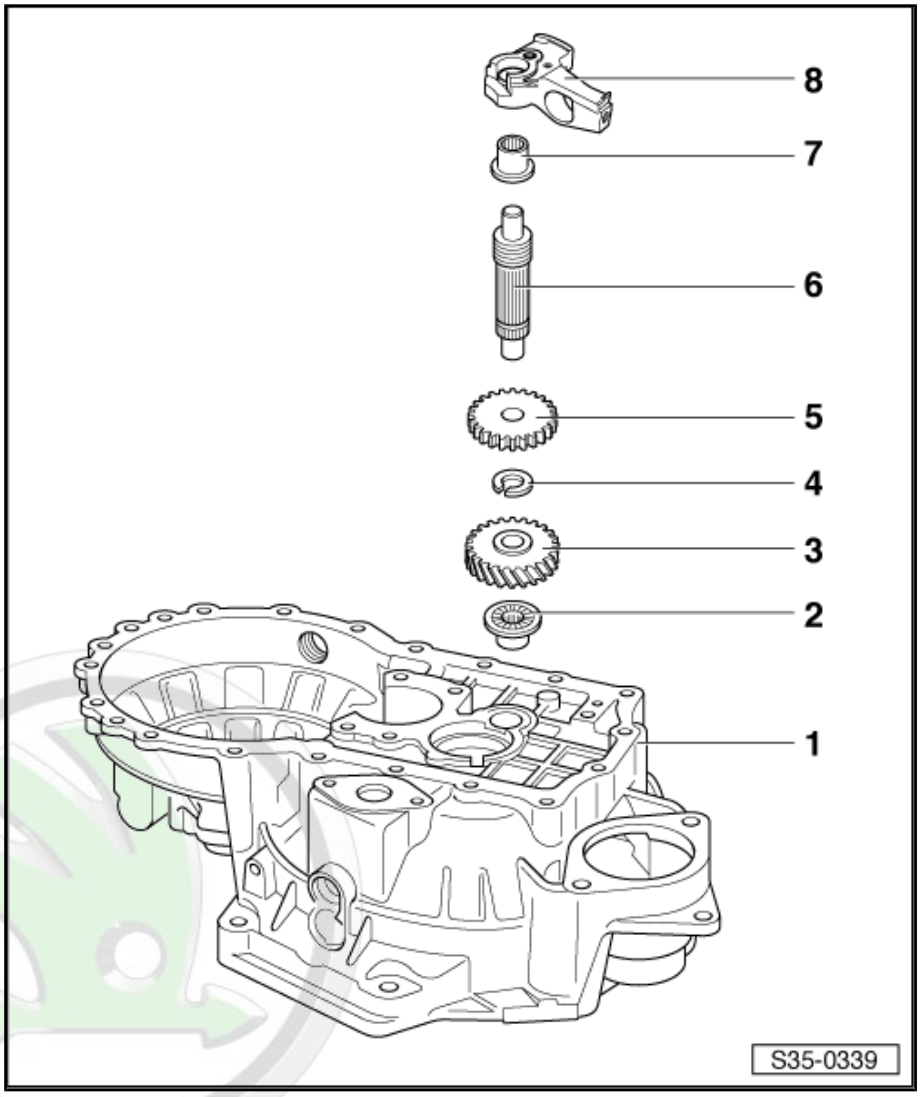
- ❑ Removing and installing ⇒ “4.7 Mounting sequence - completely disassembling and assembling the gearbox”, page 169

**7 - Needle bushing**

- ❑ pressing off ⇒ page 221
- ❑ inserting ⇒ page 221
- ❑ always replace after removing ⇒ Electronic Catalogue of Original Parts

**8 - reverse shaft support**

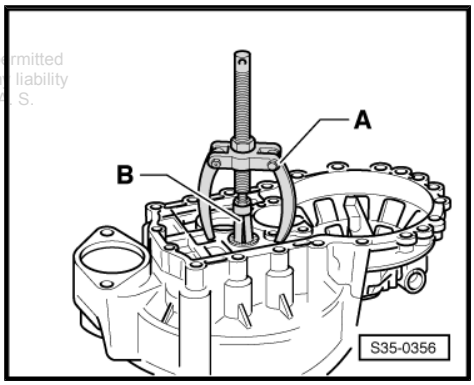
- ❑ Removing and installing ⇒ “4.7 Mounting sequence - completely disassembling and assembling the gearbox”, page 169




### Removing needle bushing from clutch housing

A - Countersupport , e.g. -Kukko 22/1-

B - Interior extractor 14.5...18.5 mm , e.g. -Kukko 21/2-

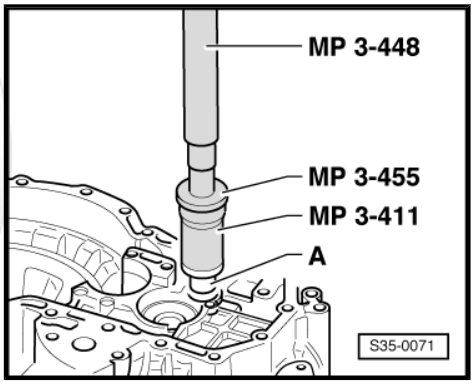



**Note**

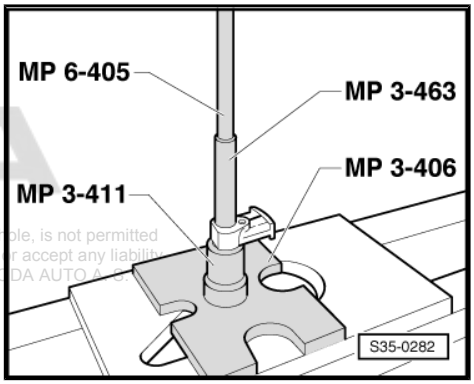
*The needle bushing is damaged when removed and must be replaced ⇒ Electronic Catalogue of Original Parts .*

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**Pressing in needle bushing -A- in the clutch housing**

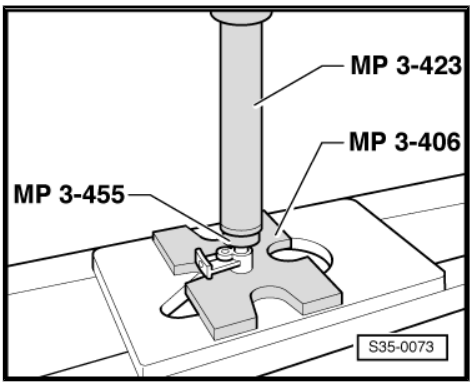



**Pressing out needle bushing from the reverse shaft support**




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**Pressing the needle bushing in the reverse shaft support**



# 39 – Final drive - differential

## 1 Replacing gasket rings for flange shafts with gearbox installed

Replacing the left flange shaft sealing ring
⇒ “1.1 Replacing the left flange shaft sealing ring”, page 222

Difference between the sealing rings with right flange
⇒ “1.2 Difference between the gasket rings with right flange”, page 223

Replace sealing ring in separated version for right flange shaft
⇒ “1.3 Replace gasket ring in separated version for right flange shaft”, page 223

Replace sealing ring in single version (together with sleeve) for right flange shaft
⇒ “1.4 Replace gasket ring in single version (together with bushing) for right flange shaft”, page 225

### 1.1 Replacing the left flange shaft sealing ring

**Special tools and workshop equipment required**

- Multi-purpose tool - MP3-419 (VW 771)-
- Thrust piece - T10160-
- Catch pan
- Sealing grease - G 052 128 A1-

#### 1.1.1 Removing

– Remove front left wheel ⇒ Chassis; Rep. gr. 44 and raise vehicle.

– Remove the sound dampening system ⇒ Body Work; Rep. gr. 50 .

– Remove the front left wheelhouse liner ⇒ Body Work; Rep. gr. 66 .

– Turn the steering to full left lock.

– Unscrew drive shaft from flange shaft ⇒ Chassis; Rep. gr. 40 .

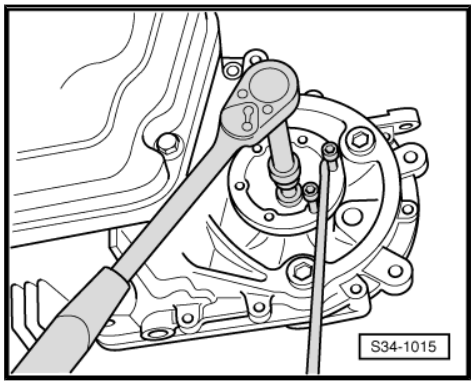
– Tie up the drive shaft as far as possible. Avoid damaging the paintwork on the drive shaft during this operation.

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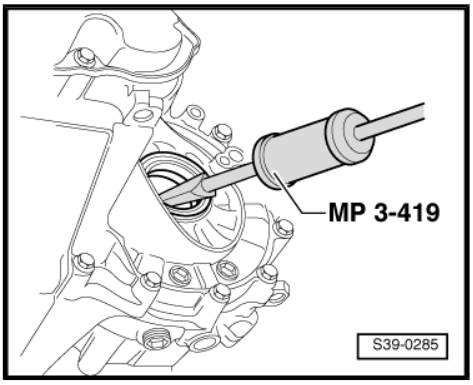
– Place the catch pan under the gearbox.

– Unscrew the fixing screw for the flange shaft, to this end insert two screws in the flange and using a tyre iron hold the shaft.

– Remove the flange shaft with pressure spring.

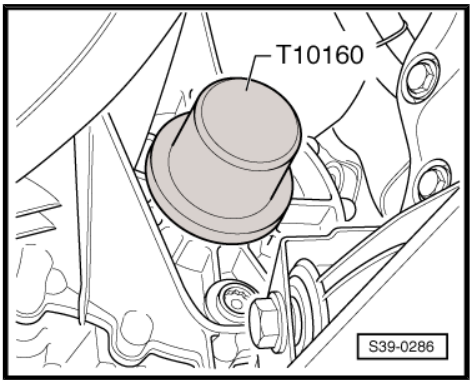


– Pull out sealing ring for flange shaft with Multi-purpose tool - MP3-419 (VW 771)- .




### 1.1.2 Installing

– Drive in new seal to stop, being careful not to cant seal.
– Fill half the space between the sealing lip and dust lip with sealing grease - G 052 128 A1- .
– Insert the flange shaft.
– Secure the flange shaft with the conical screw and tighten with tightening torque.
– Install drive shafts on gearbox ⇒ Chassis; Rep. gr. 40 .
– Check gear oil level ⇒ page 154 .
– Install the front left wheelhouse liner ⇒ Body Work; Rep. gr. 66 .
– Install the noise insulation ⇒ Body Work; Rep. gr. 50 .
– Install wheel ⇒ Chassis; Rep. gr. 44 .




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**Tightening torque**

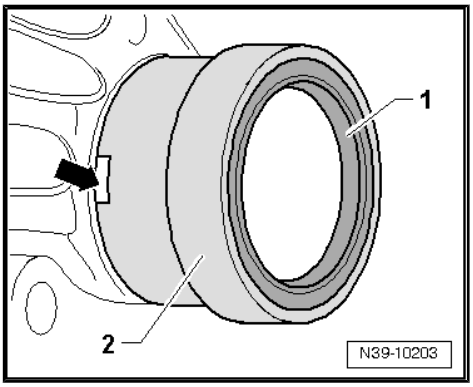
| | |
|---|---|
| Flange shaft on gearbox (conical screw) | ⇒ “4.4 Removing and installing gearbox housing and shift mechanism”, page 162 |

## 1.2 Difference between the gasket rings with right flange

**Gasket ring -1- with right flange is located in the bushing -2- and is available in different versions.**

Sealing ring -1- and sleeve -2- in split version ⇒ “1.3 Replace gasket ring in separated version for right flange shaft”, page 223 . The sleeve has notches -arrow- around its periphery.

Sealing ring -1- and sleeve -2- in one-piece version ⇒ “1.4 Replace gasket ring in single version (together with bushing) for right flange shaft”, page 225 . The sleeve does not have any notches around its periphery.




## 1.3 Replace gasket ring in separated version for right flange shaft

**Special tools and workshop equipment required**

♦ Assembly tool - MP6-414 (3253)-
♦ Thrust piece - T10160-

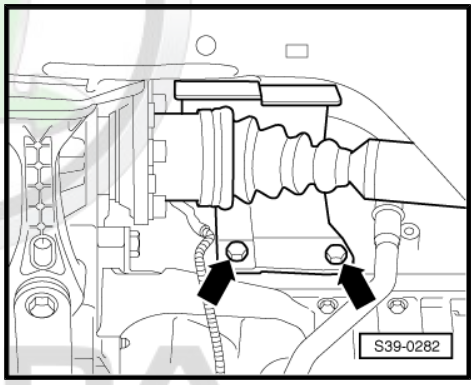
- Catch pan
- Sealing grease - G 052 128 A1-

## 1.3.1 Removing

– Remove the sound dampening system ⇒ Body Work; Rep. gr. 50 .

– Turn steering to full right lock.

– If applicable remove cap for drive shaft from the engine.

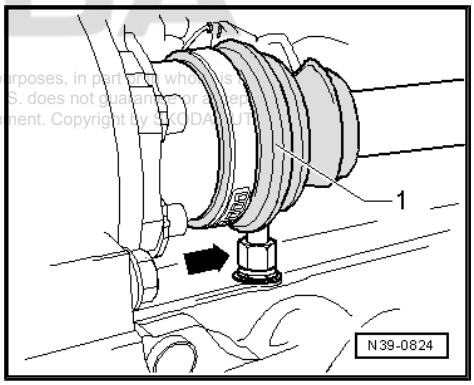



– Unscrew the drive shaft -1- from the flange shaft ⇒ Chassis; Rep. gr. 40 .

– Tie up the drive shaft as far as possible. Avoid damaging the paintwork on the drive shaft during this operation.

– Position the catch pan under the gearbox and the engine.

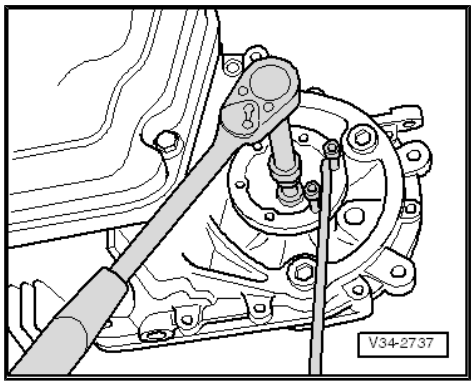
– If necessary, unscrew oil return-flow line for exhaust turbo-charger from engine -arrow- ⇒ Engine; Rep. gr. 21 .



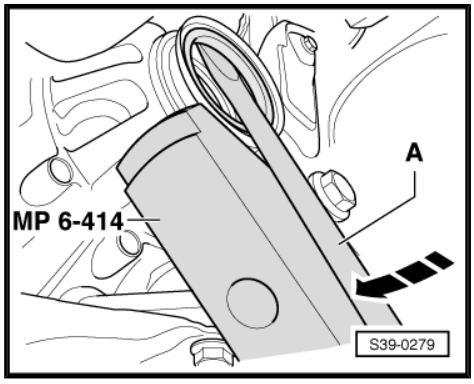

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– Unscrew the fixing screw for the flange shaft, to this end insert two screws in the flange and using a tyre iron hold the shaft.

– Remove the flange shaft with pressure spring.




– Lever out gasket ring using a screwdriver -A-, to do so support the screwdriver on a suitable base (e. g. assembly device - MP6-414 (3253)- )




**Note**

- *Do not damage the bushing as this will cause leaks.*
- *replace bushing if damaged*
  *⇒ "5 Repairing gearbox housing and clutch housing", page 182 .*

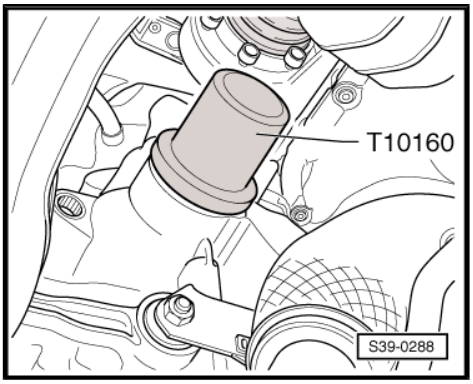
## 1.3.2 Installing

– Drive in new seal to stop, being careful not to cant seal.

– Fill half the space between the sealing lip and dust lip with sealing grease - G 052 128 A1- .

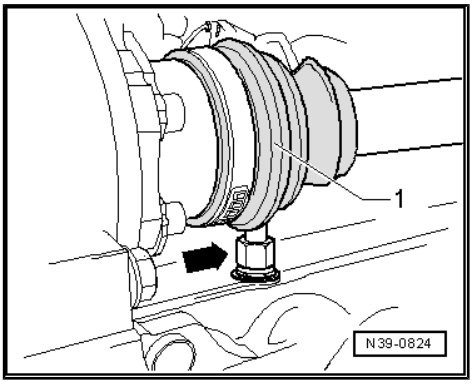
– Insert the flange shaft.

– Secure the flange shaft with the conical screw and tighten with tightening torque.




– If the oil return-flow line for exhaust turbocharger was unscrewed at the engine, now install it again -arrow- ⇒ Engine; Rep. gr. 21 .

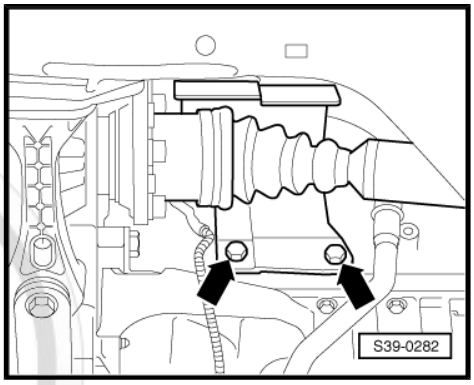
– Install drive shaft -1- on gearbox ⇒ Chassis; Rep. gr. 40 .




– If necessary screw on cap for drive shaft.

– Check gear oil level
⇒ “3 Checking the gear oil level”, page 154 .

– Install the noise insulation ⇒ Body Work; Rep. gr. 50 .




**Tightening torque**

| | |
|---|---|
| Flange shaft on gearbox (conical screw) | ⇒ “4.5 Removing and installing the drive shaft, output shaft, differential gear and shift forks”, page 163 |
| Protective cap drive shaft on engine | ⇒ “2.2.1 Tightening torques”, page 136 |

## 1.4 Replace gasket ring in single version (together with bushing) for right flange shaft

**Special tools and workshop equipment required**

- Multi-purpose tool - MP3-419 (VW 771)-
- Assembly tool - MP3-434 (3066)-
- Thrust piece - T10148-
- Catch pan
- Sealing grease - G 052 128 A1-

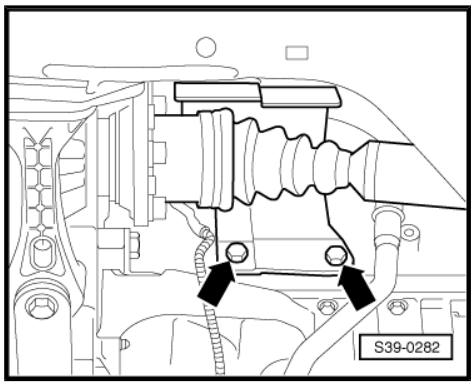
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## 1.4.1 Removing

– Remove the sound dampening system ⇒ Body Work; Rep. gr. 50 .

– Turn steering to full right lock.

– If applicable remove cap for drive shaft from the engine.

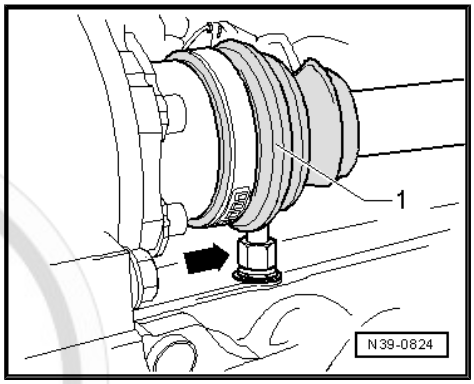



– Unscrew the drive shaft -1- from the flange shaft ⇒ Chassis; Rep. gr. 40 .

– Tie up the drive shaft as far as possible. Avoid damaging the paintwork on the drive shaft during this operation.

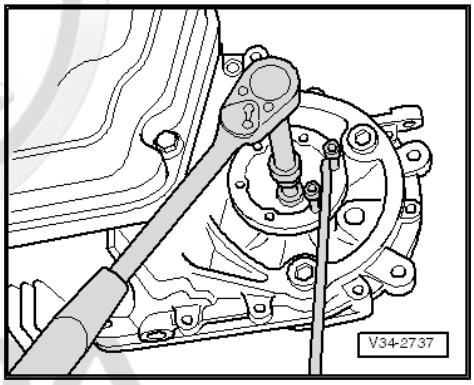
– Position the catch pan under the gearbox and the engine.

– If necessary, unscrew oil return-flow line for exhaust turbo-charger from engine -arrow- ⇒ Engine; Rep. gr. 21 .




– Unscrew the fixing screw for the flange shaft, to this end insert two screws in the flange and using a tyre iron hold the shaft.

– Remove flange shaft together with pressure spring.

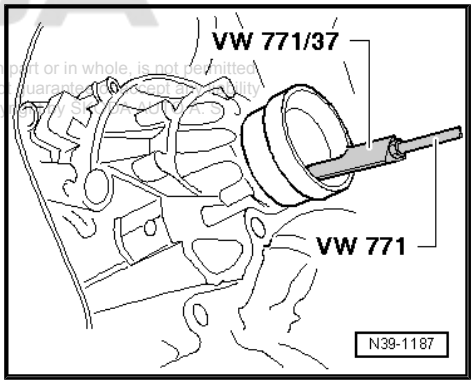



– Pull out sealing ring with bushing.

A leg is located in the inner diameter of the bushing.

– Position the extraction hook - VW 771/37 (MP3-419/37) - directly behind the leg in the bushing.

– Press the extraction hook - VW 771/37 (MP3-419/37)- forcefully into the bushing during the extraction process.



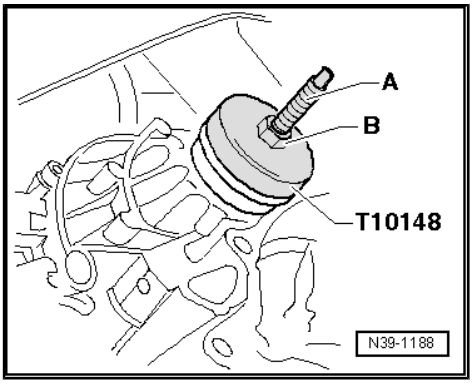

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## 1.4.2 Installing

– Pressing on together bushing and sealing ring.

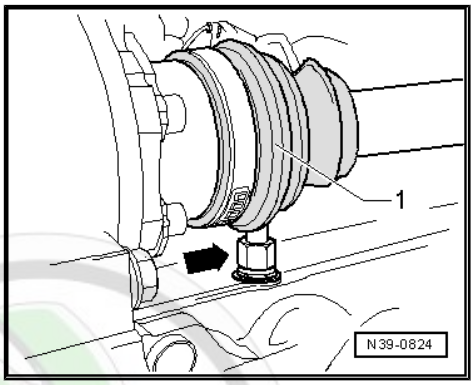
A - Screw threaded rod from assembly device - MP3-434 (3066)- into the threaded part of the differential gear.

B - M12 nut with washer

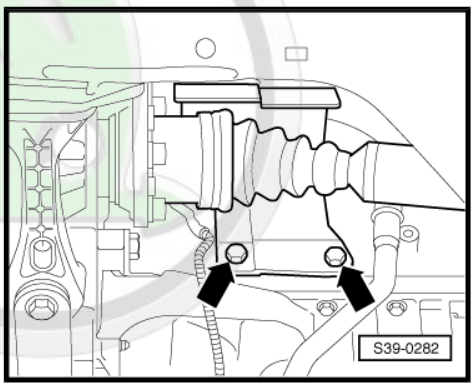



– By turning the nut -B- install the bushing over the pressure plate - T10148- up to the stop.
– Fill half the space between the sealing lip and dust lip with sealing grease - G 052 128 A1- .
– Insert the flange shaft.
– Secure the flange shaft with the conical screw and tighten with tightening torque.

– If the oil return-flow line for exhaust turbocharger was unscrewed at the engine, now install it again -arrow- ⇒ Engine; Rep. gr. 21 .
– Install drive shaft -1- on gearbox ⇒ Chassis; Rep. gr. 40 .




– If necessary screw on cap for drive shaft.
– Check gear oil level
⇒ “3 Checking the gear oil level”, page 154 .
– Install the noise insulation ⇒ Body Work; Rep. gr. 50 .




**Tightening torque**

| | |
|---|---|
| Flange shaft on gearbox (conical screw) | ⇒ “4.5 Removing and installing the drive shaft, output shaft, differential gear and shift forks”, page 163 |
| Protective cap drive shaft on engine | ⇒ “2.2.1 Tightening torques”, page 136 |

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# 2 Differential

Disassembling and assembling differential gear
⇒ “2.1 Disassembling and assembling differential gear”, page 228

Adjusting differential gear
⇒ “2.2 Adjusting the differential”, page 234

## 2.1 Disassembling and assembling differential gear

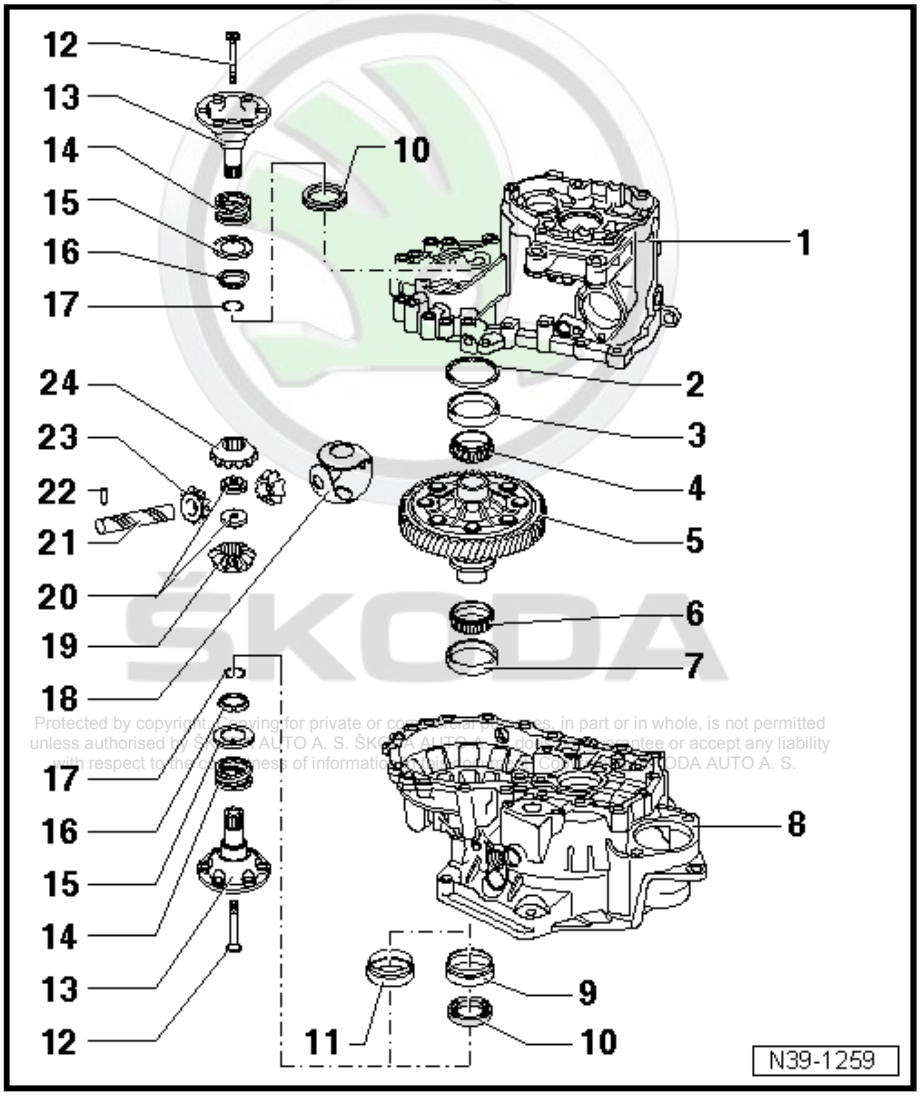
**Special tools and workshop equipment required**

- Counterholder - MP1-223 (3067)-
- Pressure plate - MP3-406 (VW 401)-
- Pressure plate - MP3-407 (VW 402)-
- Pressure spindle - MP3-408 (VW 412)-
- Pipe section - MP3-409 (VW 418 A)-
- Drive bushing - MP3-427 (40-21)-
- Drift - MP3-448 (VW 408 A)-
- Thrust piece - MP3-459 (VW 473) -
- Thrust plate - MP3-464 (30-205)-
- Thrust plate - MP3-467 (40-105)-
- Thrust piece - MP3-468 (2007)-
- Bushing - MP3-474 (3144)-
- Tapered-roller bearing extractor - V.A.G 1582-
- Support - V.A.G 1582/3-
- Interior extractor 46...58 mm , e.g. -Kukko 21/7-
- Countersupport e.g. -Kukko 22/2-

**Note**

- *Before installing heat the inner ring of the tapered-roller bearing to 100°C.*
- *Replace both tapered-roller bearings together.*
- *When replacing the tapered-roller bearings. the differential housing. the gearbox housing or the clutch housing. set the differential gear* ⇒ *“2.2 Adjusting the differential”, page 234* .

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**1 - Gearbox housing**

**2 - Adjusting washer**

- ❑ for differential
- ❑ Determine thickness ⇒ “2.2 Adjusting the differential”, page 234

**3 - Outer ring/tapered-roller bearing**

- ❑ removing ⇒ page 231
- ❑ inserting ⇒ page 232

**4 - Inner ring/tapered-roller bearing**

- ❑ remove ⇒ page 231
- ❑ inserting ⇒ page 231

**5 - Differential housing**

- ❑ with gear pinion for final drive
- ❑ Differential gear housing adapted to the stop disc compound ⇒ page 233

**6 - Inner ring/tapered-roller bearing**

- ❑ remove ⇒ page 231
- ❑ inserting ⇒ page 231

**7 - Outer ring/tapered-roller bearing**

- ❑ pressing off ⇒ page 230
- ❑ inserting ⇒ page 231

**8 - Clutch housing**

**9 - Bushing**

- ❑ for support of gasket ring Pos. 10
- ❑ Removing and installing ⇒ “5 Repairing gearbox housing and clutch housing”, page 182

**10 - Sealing ring**

- ❑ left - replace with installed gearbox ⇒ “1.1 Replacing the left flange shaft sealing ring”, page 222
- ❑ right - replace with installed gearbox ⇒ “1.3 Replace gasket ring in separated version for right flange shaft”, page 223

**11 - Sealing ring and bushing as one component.**

- ❑ replace gasket ring and bushing together in the event of damage to the gasket ring ⇒ “1.4 Replace gasket ring in single version (together with bushing) for right flange shaft”, page 225
- ❑ Difference ⇒ “1.2 Difference between the gasket rings with right flange”, page 223

**12 - Screw**

- ❑ screw to threaded connector Pos. 20 to attach the flange shaft
- ❑ 25 Nm

**13 - Flange shaft**

- ❑ Removing and installing ⇒ “1 Replacing gasket rings for flange shafts with gearbox installed”, page 222

**14 - Pressure spring for flange shaft**

- ❑ fitted behind flange shafts

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**15 - Thrust washer**

- ❑ Fitting position ⇒ page 234

**16 - Conical ring**

- ❑ with slots for thrust washer catch
- ❑ Fitting position: Cone for differential gear housing

**17 - Circlip**

- ❑ holds the conical ring. stop disc and pressure spring in position when the flange shaft is removed

**18 - Stop disc compound**

- ❑ when installing moisten with gearbox oil
- ❑ on certain gearboxes the stop disc compound was provided with lands ⇒ page 233

**19 - Differential bevel gear, large**

- ❑ installing ⇒ page 234

**20 - Threaded part**

- ❑ installing ⇒ page 234

**21 - Differential bevel gear shaft**

- ❑ drive out with drift
- ❑ remove together with short tensioning sleeve ⇒ page 233
- ❑ remove together with long tensioning sleeve ⇒ page 233
- ❑ installing ⇒ page 234

**22 - Tensioning sleeve**

- ❑ to secure the differential bevel gear shaft
- ❑ Difference between the tensioning sleeves ⇒ page 232
- ❑ short tensioning sleeve; removing and installing ⇒ page 233
- ❑ long tensioning sleeve; removing ⇒ page 233
- ❑ long tensioning sleeve; installing ⇒ page 233

**23 - Differential bevel gear, small**

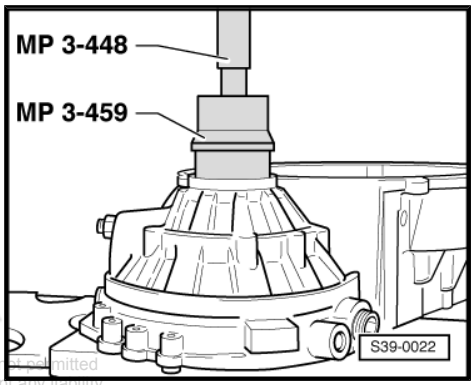
- ❑ installing ⇒ page 234

**24 - Differential bevel gear, large**

- ❑ installing ⇒ page 234

**Press outer ring/tapered-roller bearing out of clutch housing**

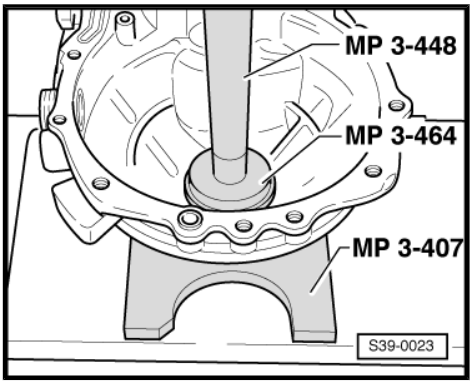
– First remove support bushing for sealing ring/flange shaft.




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### Press outer ring/tapered-roller bearing into the clutch housing

No adjusting washer is fitted at the side of the clutch housing.

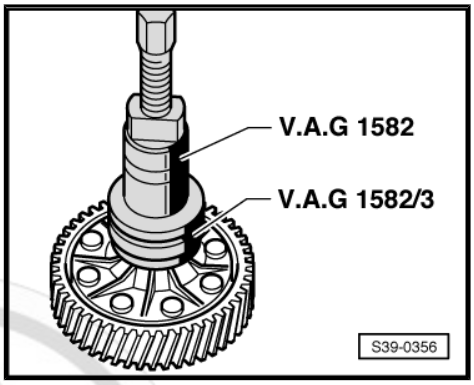



### Remove inner rings/tapered-roller bearing

– Before fitting the extractor, position pressure plate - MP3-467 (40-105) - on the differential gear housing.

**Note**

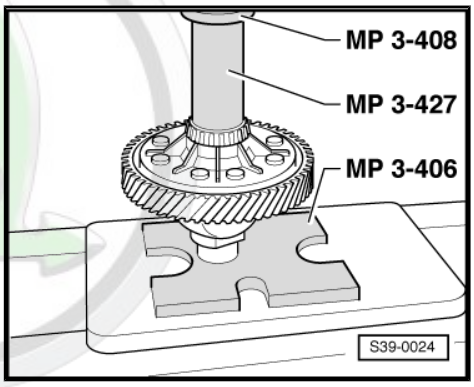
*Both inner rings/tapered-roller bearings of the differential housing are removed in the same way.*




### Press on inner rings/tapered-roller bearing

**Note**

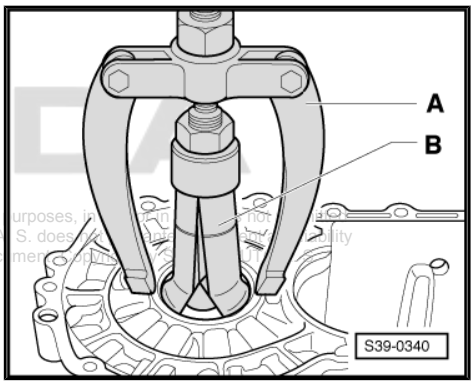
*The inner ring/tapered-roller bearing for the gearbox housing and clutch housing are pressed on with the same special tools.*




### Remove outer ring/tapered-roller bearing from the gearbox housing

A - Countersupport . e.g. -Kukko 22/2-

B - Interior extractor 46...58 mm , e.g. -Kukko 21/7-

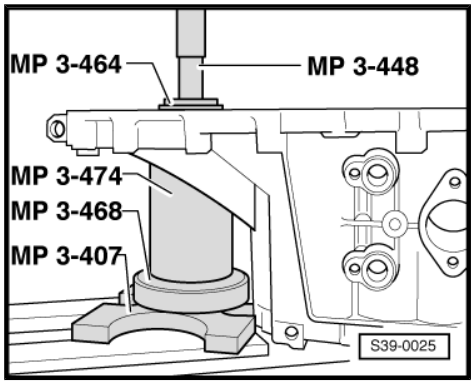



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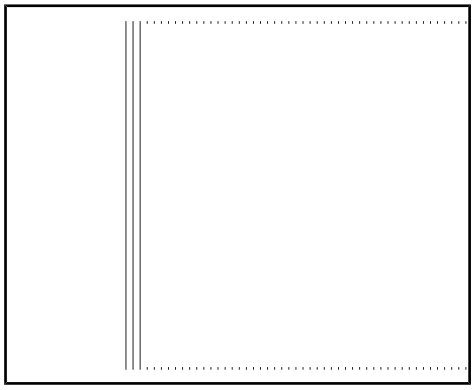
### Press in outer ring/tapered-roller bearing in the gearbox housing

– Position adjusting washer under outside ring.

– Support the gearbox housing with a bushing - MP3-474 (3144)- directly below the bearing support.




### Difference between the tensioning sleeves



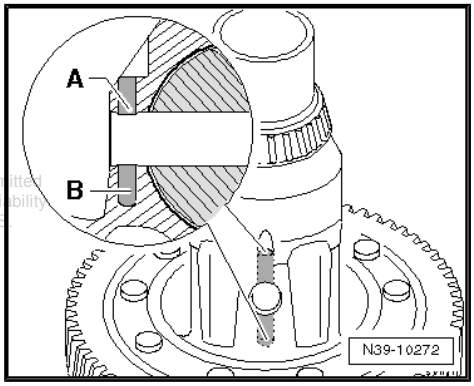
| Dimension “a” mm | Distinguishing feature |
|---|---|
| 28.5 (short tensioning sleeve)<br>Removing and installing ⇒ page 233 | with round slot -arrows- |
| 36.0 (long tensioning sleeve)<br>removing ⇒ page 233<br>installing ⇒ page 233 | without round slot |

### Assign differential gear housing

The hole in the differential gear housing was adapted due to the longer tensioning sleeve.

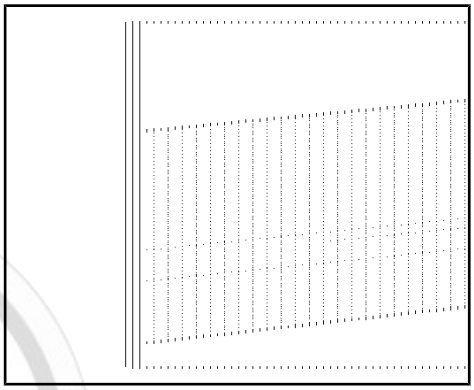
– Check the hole for the tensioning sleeve in the differential gear housing.

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| Bore | Length of tensioning sleeve (mm) |
|---|---|
| »A« | 28.5 (short tensioning sleeve) |
| »A« and »B« | 36.0 (long tensioning sleeve) |

**Remove and install the short tensioning sleeve (with round slot) for the differential bevel gear shaft**



**Removing**

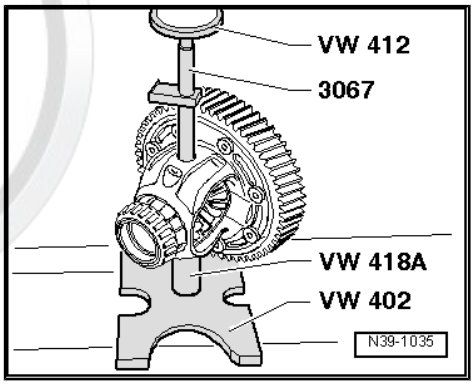
– Cover inner ring/tapered-roller bearing to avoid any possible damage and swarf.

– Drive out tensioning sleeve with a chisel. position the chisel in the circular slot.

**Installing**

– Drive into the differential gear housing up to the stop.

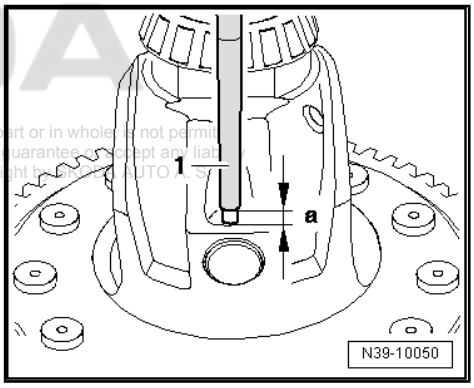
**Remove the long tensioning sleeve (without round slot) and press off the differential bevel gear shaft**




When pressing out the tensioning sleeve, it is sheared off during this procedure.

– Drive the remaining part of the tensioning sleeve out of the differential gear housing.

**Install long tensioning sleeve (without round slot)**

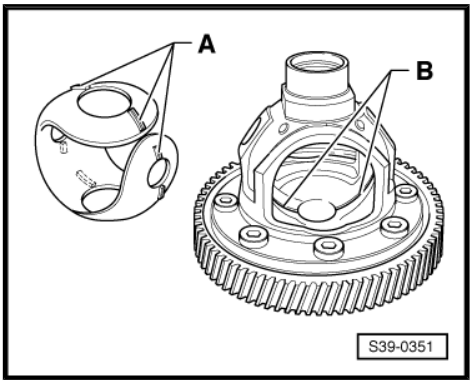



– Adjust the hole in the differential bevel gear shaft at the hole in the differential gear housing.

– Drive in the new tensioning sleeve to the dimension -a- = 3.0 mm.

The tensioning sleeve must not come in contact with the gearbox when the differential gear housing is installed.

**On certain gearboxes the stop disc compound was provided with lands -A- in the area of the openings.**



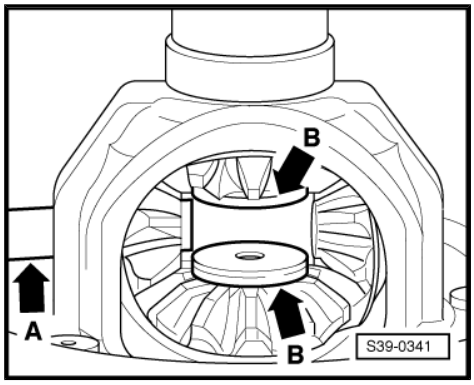

These lands grip into the round slot -B- of the differential gear housing.

– Install stop disc compound with gearbox oil.

– Insert the stop disc compound in such a way that the lands lock into the slot -B- in the differential gear housing.

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**Install differential bevel gears, large and small**

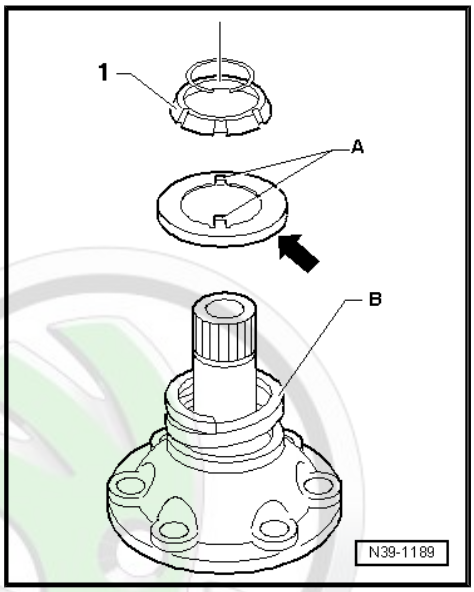



– Install stop disc compound with gearbox oil.
– Insert both large differential bevel gears and secure (e.g. with flange shaft).
– Insert both small differential bevel gears with a 180° offset.
– Push in the differential bevel gear shaft -arrow A- up to the first small differential bevel gear.
– Insert the threaded parts -arrows B- in the large differential bevel gears.

Fitting position: Heel of the differential bevel gear.

– Drive in the differential bevel gear shaft up to end position and secure with tensioning sleeve.

**Fitting position of thrust washer for the conical ring -1-**




The collar -arrow- points towards the pressure spring -B-.

The lands -A- are available on certain gearboxes.

The lands -A- point towards the conical ring -1-.

## 2.2 Adjusting the differential

**Special tools and workshop equipment required**

- Gauge block plate - MP3-405/17-
- Pressure plate - MP3-407 (VW 402)-
- Universal dial gauge bracket - MP3-447 (VW 387)-
- Drift - MP3-448 (VW 408 A)-
- Thrust plate - MP3-464 (30-205)-
- Thrust piece - MP3-468 (2007)-
- Bushing - MP3-474 (3144)-
- Interior extractor 46...58 mm , e.g. -Kukko 21/7-
- Countersupport e.g. -Kukko 22/2-
- Dial gauge

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The differential must be re-set when the following components are replaced:

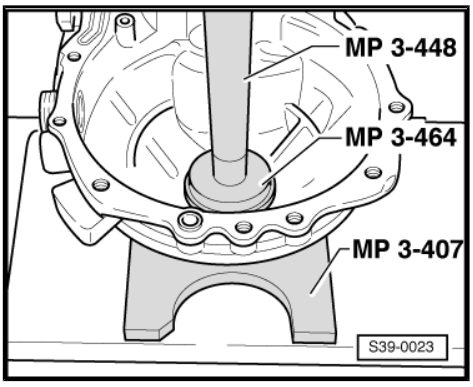
- Gearbox housing
- Clutch housing
- Differential housing

or

- Tapered-roller bearings of the differential gear

Setting overview ⇒ “3 Setting overview”, page 237 .

– Press the outer ring/tapered-roller bearing with thrust plate - MP3-464 (30-205) - into the clutch housing.



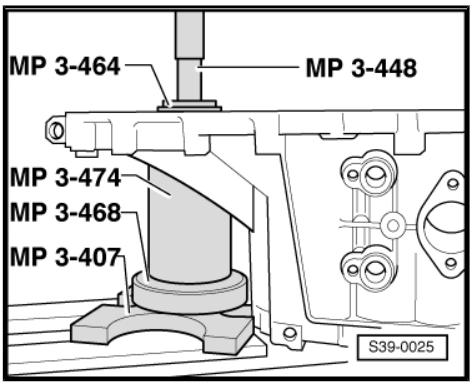

**Note**

*The inner and outer ring of the tapered-roller bearing are paired. Do not interchange!*

– Press outer ring/tapered-roller bearing without adjusting washer with thrust plate - MP3-464 (30-205)- into the gearbox housing.

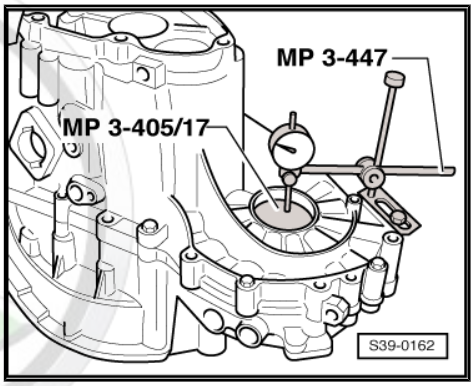
– Insert the differential gear in the clutch housing.

– Position the gearbox housing and tighten 5 screws to torque 25 Nm.




– Set the dial gauge to “0” with 1 mm bias.

– Move the differential gear up and down, read and write down the clearance on the dial gauge (example: 0.70 mm).




## 2.2.1 Determine thickness of the adjusting washer

The prescribed bearing preload is reached by adding to the established measured value a constant compression value (0.25 mm).

**Example:**

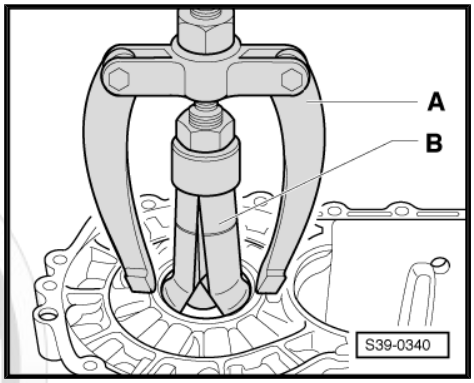
| | |
|---|---|
| measured value | 0.70 mm |
| + pressure (const. value) | 0.25 mm |
| Thickness of the adjusting washer = | 0.95 mm |

**Example:**

| Measured value of bearing play | Thickness of the adjusting washer according to the table |
|---|---|
| 0.70 mm | 0.95 mm |

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– Remove the gearbox housing and pull the outer ring/tapered-roller bearing out of the gearbox housing.




A - Countersupport . e.g. -Kukko 22/2-

B - Interior extractor 46...58 mm , e.g. -Kukko 21/7-

The following adjusting washers are available:

| Bearing clearance | Adjusting washer |
|---|---|
| Measured value (mm) | Thickness (mm) |
| 0.303…0.449 | 0.650 |
| 0.450…0.499 | 0.700 |
| 0.500…0.549 | 0.750 |
| 0.550…0.599 | 0.800 |
| 0.600…0.649 | 0.850 |
| 0.650…0.699 | 0.900 |
| 0.700…0.749 | 0.950 |
| 0.750…0.799 | 1.000 |
| 0.800…0.849 | 1.050 |
| 0.850…0.899 | 1.100 |
| 0.900…0.949 | 1.150 |
| 0.950…0.999 | 1.200 |
| 1.000…1.049 | 1.250 |
| 1.050…1.099 | 1.300 |
| 1.100…1.149 | 1.350 |
| 1.150 - 1.199 | 1.400 |

**Note**

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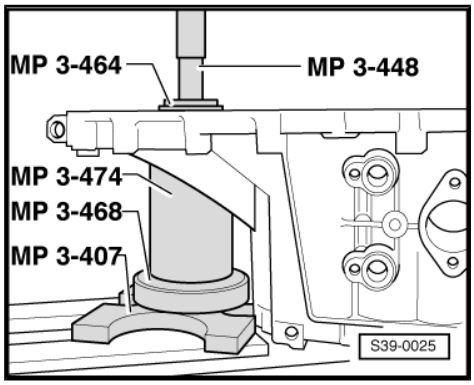
*Assign the adjusting washers via the ⇒ Electronic Catalogue of Original Parts .*

– Insert adjusting washers of the determined thickness, the thickest adjusting washer first.

If the measured washer thickness is greater than the one listed in the table. 2 washers corresponding to the measured value may be fitted.

The various thicknesses make it possible to achieve the exact shim thickness required.

– Press outer ring/tapered-roller bearing with the determined adjusting washer (in the example 0.95 mm) again into the gearbox housing.




– Fit gearbox housing and tighten ⇒ “4.4 Removing and installing gearbox housing and shift mechanism”, page 162 .

# 3 Setting overview

**Note**

- *When working on the gearbox it is only necessary to re-set the drive shaft, output shaft or differential gear if parts were replaced that directly affect the setting of the gearbox.*
- *To avoid unnecessary settings. refer to the following table:*

| | | Set: | | |
|---|---|---|---|---|
| | | Drive shaft ⇒ “1 Drive shaft”, page 194 | Output shaft ⇒ “2 Output shaft”, page 205 | Differential gear ⇒ “2 Differential”, page 228 |
| Replaced part: | Gearbox housing | x | | x |
| | Clutch housing | x | x | x |
| | Drive shaft | x | | |
| | Output shaft | | x | |
| | Differential housing | | | x |
| | Tapered-roller bearing for drive shaft | x | | |
| | Tapered-roller bearing for output shaft | | x | |
| | Tapered-roller bearings for differential gears | | | x |
| | Gear wheel for 4th gear | x | | |

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